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BY SEWELL PEASLEE WRIGHT

March 1932 ASTOUNDING STORIES 20 cents

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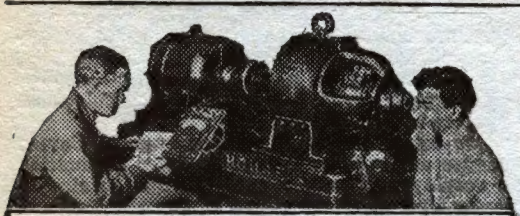

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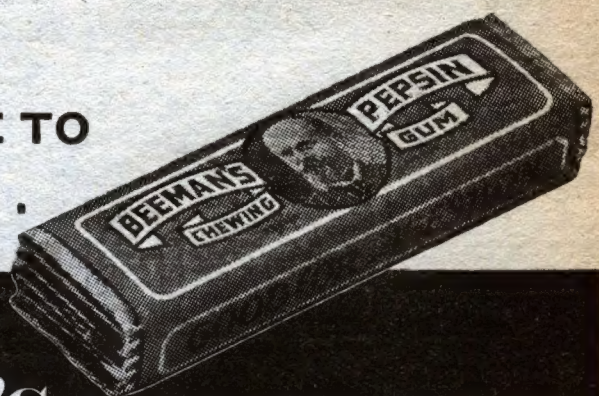

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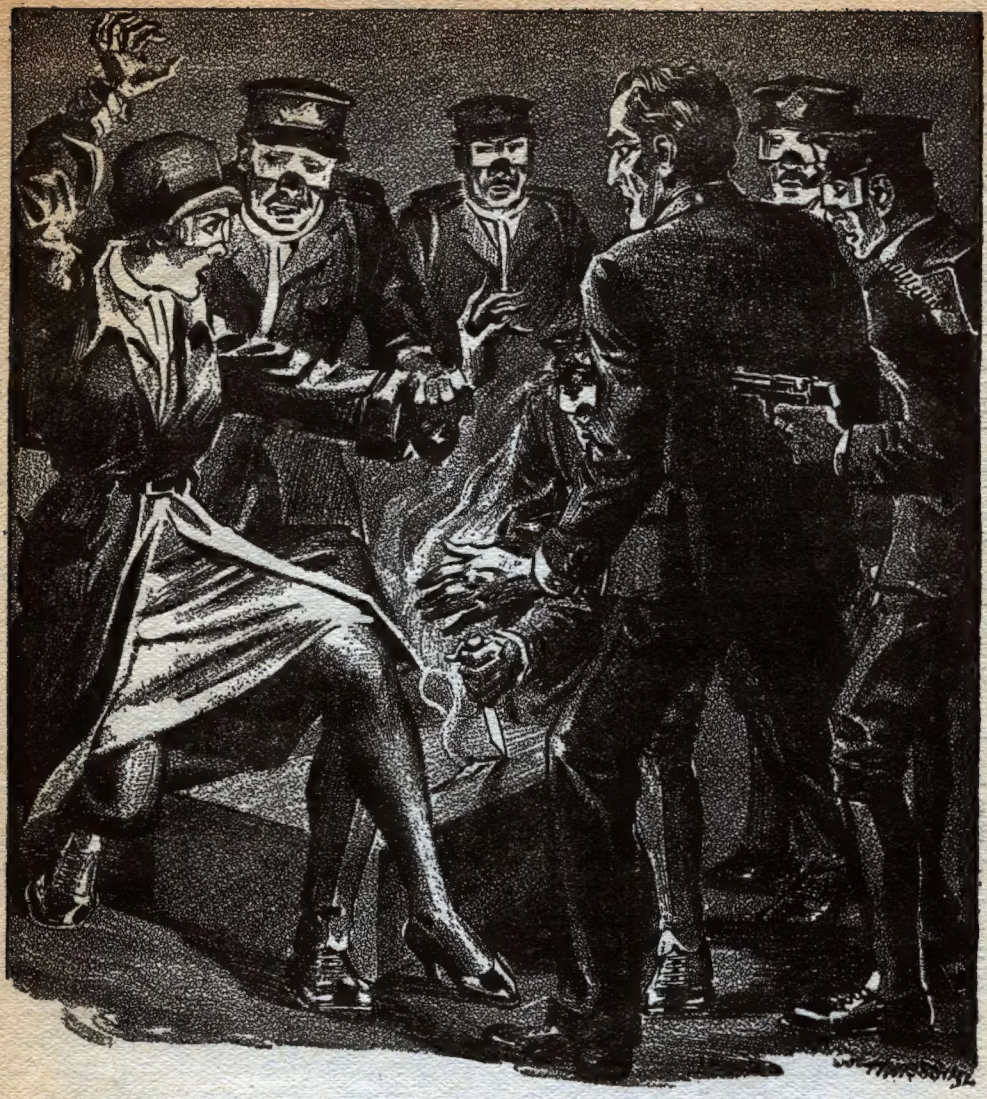


Dr. Bird fell back under the ferocity of her attack.

Poisoned Air

By Capt. S. P. Meek

A TELEPHONE bell jangled insistently. The orderly on duty dropped his feet from the desk to the floor and lifted the receiver with a muttered curse.

"Post hospital, Aberdeen Proving Ground," he said sleepily, rubbing his eyes.

A burst of raucous coughing answered him. Several times it ceased for an instant and a voice tried to speak, but each time a fresh spasm of deep-chested wracking coughing interrupted.

Again Dr. Bird closes with the evil Saranoff—this time near the Aberdeen Proving Ground, in a deadly, mysterious blanket of fog.

"Who is this?" demanded the now aroused orderly. "What's the matter?"

Between intervals of coughing difficultly enunciated words reached him.

"This is—*uch! uch!*—Lieutenant Burroughs at the—*uch!*—Michaelville range. We have been—*uch!*—caught in a cloud of poison—*uch! uch!*—gas. Send an ambulance and a—*uch!*—surgeon at once. Better bring—*uch!*—gas masks."

"At the Michaelville range, sir? How many men are down there?"

"*Uch! uch! uch!*—five—all help—*uch! uch!*—helpless. Hurry!"

"Yes, sir. I'll start two ambulances down at once, sir."

"Don't forget the—*uch! uch!*—gas—*uch!*—masks."

"No, sir; I'll send them, sir."

FIVE minutes later two ambulances rolled out of the garage and took the four-mile winding ribbon of concrete which separated the Michaelville water impact range from the main front of the Aberdeen Proving Ground. On each ambulance was a hastily awakened and partially clothed medical officer. For three miles they tore along the curving road at high speed. Without warning the leading machine slowed down. The driver of the second ambulance shoved home his brake just in time to keep from ramming the leading vehicle.

"What's the matter?" he shouted.

As he spoke he gave a muttered curse and switched on his amber fog-light. From the marshes on either side of the road a deep blanket of fog rolled up and enveloped the vehicle, almost shutting off the road from sight. The forward ambulance began to grope its way slowly forward. The senior medical officer sniffed the fog critically and shouted to his driver.

"Stop!" he cried. "There's something funny about this fog. Every one put on gas masks."

He coughed slightly as he adjusted his mask. His orders were shouted to the ambulance in the rear but before the masks could be adjusted, every member of the crew was vying with the rest in the frequency and violence of the coughs which he could emit. The masks did not seem to shut out the poisonous fog which crept in between the masks and the men's faces and seemed to take bodily possession of their lungs.

"I don't believe we'll ever make the last mile to Michaelville through this, Major," cried the driver between intervals of coughing. "Hadn't we better turn back while we can?"

"Drive on!" cried the medical officer. "We'll keep going as long as we can. Imagine what those poor devils on the range are going through without masks of any sort."

ON through the rapidly thickening fog, the two ambulances groped their way. The road seemed interminable, but at length the flood lights of the Michaelville end of the range came dimly into view. As the vehicles stopped the two surgeons jumped to the ground and groped their way forward, stretcher bearers following them closely. Presently Major Martin stumbled over a body which lay at full length on the concrete runway between the two main buildings. He stooped and examined the man with the aid of a pocket flashlight.

"He's alive," he announced in muffled tones through his mask. "Take him to the ambulance and fit a mask on him."

Three more unconscious men were carried to the ambulances before the prone form of Lieutenant Burroughs was found by the searchers. The lieutenant lay on his back not far from the telephone

and directly under the glare of a huge arc-light. His eyes were open and he was conscious, but when he tried to speak, only a murmur came from his lips. There was a rattle in his chest and faint coughs tried in vain to force their way out between his stiffened lips.

"Easy, Lieutenant," said Major Martin as he bent over him; "don't try to talk just now. You're all right and we'll have a mask on you in a jiffy. That damned gas isn't as thick right here as it is down the road a way."

Two medical corps men lifted the lieutenant onto a stretcher and started to fit a mask over his face. He feebly raised a hand to stop them. His lips formed words which he could not enunciate, but Major Martin understood them.

"Your men?" he said between intervals of coughing. "We've got them all in the ambulance, I think. There were four besides yourself, weren't there?"

The lieutenant nodded.

"Right. We have them all. Now we'll take you back to the hospital and have you fixed up in a jiffy."

THE entire rescue crew were coughing violently as the ambulances left Michaelville. For a mile they drove through fog that was thicker than had been seen in Maryland for years. They reached the point where they had encountered the congealed moisture on the way out, but now there was no diminution of its density. The main post was less than two miles away when they burst out into a clear night and increased their speed.

As the two machines drew up in front of the post hospital, the driver of the leading ambulance swayed in his seat. Blindly he pulled on his emergency brake and then slumped forward in his seat, his breath coming in wheezing gasps. Major Martin hastily tore the mask from his face and glanced at it.

"Take him in with the rest!" he cried. "His mask must have leaked."

As they entered the hospital, a sickening weakness overcame Major Martin. From all sides a black pall seemed to roll in on him and bits of ice seemed to form in his brain. He reeled and caught at the shoulder of a corps man who was passing. The orderly caught at him and looked for a moment at his livid face.

"Sergeant Connors!" he cried.

A technical sergeant hastened up. Major Martin forced words with difficulty through stiffening lips.

"Call Captain Murdock," he wheezed, "and have him get Captain Williams. I'm down and probably Dr. Briscoe will be down in a few minutes. Telephone the commanding officer and tell him to quarantine the whole proving ground. Have the telephone orderly wake everyone on the post and order them to close all windows in all buildings and not to venture outside until they get fresh orders. This seems to be the same stuff they had in Belgium last December."

As the last words came from his lips he slowly stiffened and slumped toward the ground. The sergeant and the orderly picked him up and carried him to a bed in the emergency ward. The orderly hurried away to close all of the hospital windows while Sergeant Connors took down the receiver of the telephone and began to carry out the Major's orders.

DR. BIRD glanced at the newspaper clipping which Operative Carnes of the United States Secret Service laid on his desk. Into his eyes came a curious glitter, sure evidence that the famous scientist's interest was aroused.

"Last December when we discussed this matter, Doctor," said the detective, "you gave it as your opinion that Ivan Saranoff was at the bottom of it and that the same plague which devastated the Meuse Valley in Belgium would eventually make an appearance in the United States. You were right."

Dr. Bird bounded to his feet.

"Is Saranoff back on this side of the Atlantic?" he demanded.

"Officially, he is not. Every customs inspector and immigration officer has his photograph and no report of his arrest has come in, but we know Saranoff well enough to discount negative evidence where he is concerned. Whether he is here or not, the plague is."

"When did it appear?"

"Last night at the Aberdeen Proving Ground in Maryland. It has killed eight or ten and twice as many more are sick. The place is quarantined and a rigid censorship has been placed over the telephones, but it is only a matter of time before some press man will get the story. I have a car waiting below and a pass signed by the Secretary of War. Grab what apparatus you need and we'll start."

Dr. Bird pressed a button on his desk. A tall, willowy girl entered, notebook in hand. Carnes glanced with keen appreciation at her slim beauty.

"Miss Andrews," said the doctor, "in five minutes Mr. Carnes and I will leave here for Aberdeen Proving Ground in the Government car which is waiting below. You will see that Mr. Davis is in that car and that traveling laboratory 'Q' is ready to follow us."

"Yes, Doctor."

"You remember that mysterious plague in Belgium last December, do you not?"

"Yes, Doctor."

"I was unable to get over to Belgium, but an army surgeon and two Public Health Service men went over. You will get copies of all reports they made, including especially any reports of autopsies on bodies of victims. I want all data on file in the Public Health Service or the War Department. You will then obtain a car and follow us to Aberdeen. Arrangements will be made for your admittance to the proving ground. The Belgian plague has made its appearance in the United States."

SWIFTLY the expression of the girl's face changed. Her dark eyes glowed with an internal fire and the immobility of her face vanished as if by magic to be replaced by an expression of fierce hatred. Her lips drew back, exposing her strong white teeth and she literally spat out her words.

"That swine, Saranoff!" she hissed.

Carnes sprang to his feet.

"Why, it's Feodrovna Androvitch!" he cried in astonishment.

In an instant the rage faded from her face and the calm immobility which had marked it reappeared. Through the silence Dr. Bird's voice cut like a whip.

"Miss Andrews," he said sternly, "I thought that I had impressed on you the fact that even a momentary lapse from the character which you have assumed may easily be fatal to both of us. Unless you can learn to control your emotions, your usefulness to me is at an end."

Although Carnes watched closely he could not detect the slightest change of expression in the girl's face as the doctor spoke.

"I am very sorry, Doctor," she said evenly. "We were alone and I allowed the mask to slip for an instant. It will not happen again."

"It *must* not," said the doctor curtly. "Carry out your instructions."

"Yes, Doctor."

She turned on her heel and left the office. Carnes looked quickly at Dr. Bird.

"Surely that is Feodrovna Androvitch, Doctor?" he asked.

"It was. It is now Thelma Andrews, my secretary. She changed her name with her appearance and politics. I have been training her since last August. This is her first official appearance, so to speak."

"In view of her past associations, is it safe to trust her?"

"If I didn't think so, I wouldn't use her. She has ample reason to hate Ivan Saranoff and she knows how much mercy she has to hope for from him if he ever gets her in his clutches. We can't play a lone hand against Saranoff forever and I know of no better place to recruit an organization than the enemy's camp. Thelma saved our lives in Russia, you may remember."

"But even when she was rescuing us from the clutches of Saranoff's gang, she was an ardent communist, if I remember correctly."

"Theoretically I believe she still favors the world revolution, but she hates Saranoff even more than she does the bourgeoisie and I believe she had come to be willing to accept capitalistic institutions for the present, at least as far as this country is concerned. At any rate, I trust her. If you have any doubts, you can have her watched for a while."

CARNES thought for a moment and then picked up the telephone.

"I have plenty of confidence in your judgment, Doctor," he said apologetically, "but if you don't mind, I'll have Haggerty trail her for a few days. It won't do any harm."

"Very well; and if any of the Young Labor gang should penetrate her disguise, he'd be a mighty efficient bodyguard. Do as you see fit."

Carnes called the number of the secret service and conferred for a few moments with Bolton, the chief of the bureau. He turned to Dr. Bird with a smile of satisfaction.

"Haggerty will be on the job in a few minutes, Doctor."

"Good enough. The five minutes I allowed are up. Let's see how well she has performed her first task."

As they emerged from the Bureau of Standards, Carnes glanced rapidly around. In the front seat of the secret service car which he had left sat a young man whom the detective recognized as one of Dr. Bird's assistants. Behind the car stood a small delivery truck with two of the Bureau mechanics on the seat.

Dr. Bird nodded to the mechanics and followed Carnes into the big sedan. With a motorcycle policeman clearing a way for them, they roared across Washington and north along the Baltimore pike. Two hours and a half of driving brought them to Aberdeen and they turned down the concrete road leading to the proving ground. Two miles from the town a huge chain was stretched across the road with armed guards patrolling behind it. The car stopped and an officer stepped forward and examined the pass which Carnes presented.

"You are to go direct to headquarters, gentlemen," he said. "Colonel Wesley is waiting for you."

The commanding officer rose to his feet as Carnes and Dr. Bird entered his office.

"I am at your service, Dr. Bird," he said formally. "The Chief of Ordnance has given instructions

which, as I understand them, put you virtually in command of this post." There was resentment in the colonel's tone.

DR. BIRD smiled affably and extended his hand. The old colonel struggled with his chagrin for a moment, but few men could resist Dr. Bird when he deliberately tried to charm them. Colonel Wesley grasped the proffered hand.

"What I want most, Colonel, is your cooperation," said the doctor suavely. "I am not competent to assume command here even if I wished to. I would like to ask a few favors but if they should prove to be contrary to your established policies, I will gladly withdraw my request."

Colonel Wesley's face cleared as if by magic.

"You have only to ask for anything we have, Doctor," he said earnestly, "and it is yours. Frankly, we are at our wit's end."

"Thank you. I have a truck with some apparatus and three men outside. Will you have them guided to your laboratory and given what aid they need in setting their stuff up?"

"Gladly."

"My secretary, Miss Andrews, will arrive from Washington later in the day with some information. I would like to have her passed through the guards and brought directly to me wherever I am. You have the place well guarded, have you not?"

"As well as I can with my small force. All roads are patrolled by motorcycles; four launches are on the waterfront, and there are seven planes aloft."

"That is splendid. Now can you tell me just what happened last night?"

"Captain Murdock, the acting surgeon, can do that better than I can, Doctor. He is at the hospital but I'll have him up here in a few minutes."

"With your permission, we'll go to the hospital and talk to him there. I want to examine the patients in any event."

"Certainly, Doctor. I will remain at my office until I am sure that I can give you no further assistance."

WITH a word of thanks, Dr. Bird left, and, accompanied by Carnes, made his way to the hospital. Captain Murdock was frankly relieved to greet the famous Bureau of Standards scientist and readily gave him the information he desired.

"The first intimation we had of trouble was when Lieutenant Burroughs telephoned from the water impact range where they were doing night firing last night at about four A.M. Two ambulances went down and brought him and his four men back, all of them stricken with what I take to be an extremely rapidly developing form of lobar pneumonia. All of the men who went down were stricken with the same disease, two of them as soon as they got back. So far we have had eight deaths among these men and all of the rest, except Lieutenant Burroughs, are apt to go at any moment.

"The trouble seemed to come from a cloud of some dense heavy gas which rolled in from the marsh. On the advice of Major Martin, every door and window in the post was kept closed until morning. The gas never reached the upper part of the post but it reached the stables. Eleven horses and mules are dead and all of the rest are stricken. The stable detachment either failed to close their barracks tightly or else the gas went in through cracks for seven out of the nine are here in the hospital, although none of them are very seriously ill. As soon as the sun

came up, the gas seemed to disappear."

"Let me see the men who are sick."

Captain Murdock led the way into the ward. Dr. Bird went from man to man, examining charts and asking questions of the nurses and medical corps men on duty. When he had gone the rounds of the ward he entered the morgue and carefully examined the bodies of the men who lay there.

"Have you performed any autopsies?" he asked.

"Not yet."

"Have you the authority?"

"On the approval of the commanding officer."

"Please secure that approval at once. Have all lights taken out of the operating room and the windows shaded. I want to work under red light. We must examine the lungs of these men at once. With all due respect to your medical knowledge, Captain, I am not convinced that these men died of pneumonia."

"Neither am I, Doctor, but that is the best guess I could make. I'll have things fixed up for you right away."

DR. BIRD stepped to the telephone and called the laboratory. When, in half an hour, Captain Murdock announced that he was ready to proceed, Davis had arrived with an ultra-microscope and other apparatus which the doctor had telephoned for.

"Did you arrange about the horses, Davis?" asked Dr. Bird.

"Yes, sir. They will be up here as soon as the trucks can bring them."

"Good enough. We'll start operating."

An hour later, Dr. Bird straightened up and faced the puzzled medical officer.

"Captain," he said, "your diagnosis is faulty. With one possible exception, the lungs of these men are free from pneumonicocci. On the other hand there is a peculiar aspect of the tissues as though a very powerful antiseptic solution had been applied to them."

"Hardly an antiseptic, Doctor; wouldn't you say, rather, a cauterizing agent."

Dr. Bird bent again over the ultra-microscope.

"Are you familiar with the work done by Bancroft and Richter at Cornell University last November and December?" he asked.

"No, I can't say that I am."

"They were working under a Heckscher Foundation grant studying just how antiseptic solutions destroy bacteria. It has always been held that some chemical change went on, but this theory they disproved. It is a process of absorption. If enough of the chemical adheres to the living bacterium, the living protoplasm thickens and irreversibly coagulates. It resembles a boiling without heat. I have seen some of their slides and the appearance is exactly what I see in this tissue."

Captain Murdock bent over the microscope with a new respect for Dr. Bird in his face.

"I agree with you, Doctor," he said. "This tissue certainly looks as though it had been boiled. It is certainly coagulated, as I can plainly see now that you point it out to me. You believe, then, that it is a simple case of gassing?"

"If so, it was done by no known gas. I have studied at Edgewood Arsenal, and I am familiar with all of the work done by the Chemical Warfare Service in gases. No known gas will produce exactly this appearance. It is something new. Carnes, have those horses been brought up yet?"

"I'll see, Doctor."

"If they are, bring one here."

IN a few moments the body of a dead horse was dragged into the operating room and Dr. Bird attacked it with a rib saw. He soon laid the lungs open and dragged them from the body. He cut down the middle of one of the organs and shaved off a thin slice which he placed under the lens of a powerful binocular microscope.

"Hello, what the dickens is this?" he exclaimed.

With a scalpel and a delicate pair of tweezers he carefully separated from the lung tissue a tiny speck of crystalline substance which glittered under the red light in the operating room. He carefully transferred it to a glass slide and put it under a microscope with a higher magnification.

"Rhombohedral regular," he mused as he examined it. "Colorless, friable, and cleaving in irregular planes. What in thunder can it be? Have you ever seen anything like this in a lung, Murdock?"

The medical officer bent over the microscope for a long time before he shook his head with a puzzled air.

"I never have," he admitted.

"Then that's probably what we're looking for. Start slicing every lung in this place and look for those crystals. Save them and put them in this watch glass. If we can get enough of them, we may be able to learn something. Carnes, get the rest of those horses in here and open them up."

Two hours of careful work netted them a tiny pile of the peculiar crystals. Some had come from the lungs of the dead animals and some few from the lungs of the dead soldiers. Dr. Bird placed the crystals in a glass bottle which he covered with layer after layer of black paper.

"Get me more of those crystals if you can find them, Captain Murdock," he said, "and in any case, leave the bodies here for further study. Davis and I will go to the laboratory and try to find out what they are. Carnes, hasn't Miss Andrews showed up yet?"

"No, Doctor."

"Locate her on the telephone if you can and tell her not to bother about anything except the autopsy reports and to get them here as quickly as possible. Let me know when you have that done."

IN a dark room of the photographic laboratory, Dr. Bird removed the black wrappings from the bottle. He dropped a few of the crystals in a test tube and added distilled water. The water assumed a pink tinge as the blood with which the crystals were covered dissolved, but the crystals themselves did not change. They rose and floated on the surface of the water.

"Insoluble in water, Davis," commented the doctor. "Better wash the lot and then we'll get after the ultimate analysis. Whether we'll be able to make a proximate is doubtful in view of the small amount of sample we have. It's dollars to doughnuts that it's some carbon compound."

He heated a few of the washed crystals in a watch glass. Suddenly there was a sharp crack and the material disappeared. Dr. Bird thrust his nose toward the glass and sniffed carefully.

"The dickens!" he muttered. "Davis, have I got a cold or do you smell garlic?"

"Faintly, Doctor."

"I have a hunch. Fill a gasometer with purified argon and we'll introduce a few of these crystals and explode them. If I'm right—"

Half an hour later he straightened up and examined the tube of the gas analysis apparatus with which he was working. The level

of the gas showed it to be of the original volume but the liquid under the argon was stained a light brown.

"It's impossible, Davis," cried the doctor, "but nevertheless, it's true. Expose some of those crystals to strong sunlight and see what happens."

The crystals rapidly disappeared as the light from a sun-ray arc fell on them.

"It's true, Davis," cried the doctor, positive awe in his voice. "Keep this strictly under your hat for the present. Now that you know what we're up against, fix up a couple of masks and air-collecting apparatus. That stuff will show up again in the swamp to-night and I am going down there to collect some samples. I'll telephone the hospital now."

AS Dr. Bird emerged from the dark room, Carnes hurried up with a worried expression.

"The devil's to pay, Doctor," was his greeting.

"All right, stall him off for a minute while I telephone the hospital. I think I can save some of those poor fellows up there."

Carnes paced the floor in anxiety while Dr. Bird got Captain Murdock on the telephone.

"Bird talking, Murdock," he said crisply. "How much deep therapy X-ray apparatus have you got up there? . . . Too bad. . . . Well, at least you can give every patient a four-minute dose of maximum intensity and repeat in an hour or so. Keep them under sun-ray arcs as much as you can. Be ready for a fresh attack of the same epidemic to-night. As fast as the patients come in, give them a five-minute dose of X-rays and then sun-rays. Do you understand? . . . All right, then.

"Just a moment more, Carnes," he went on as he called the office of the commanding officer. "Colonel Wesley, this is Dr. Bird. I think that I have some light on your problem. You must anticipate another more virulent attack than you had last night, probably as soon as the sun goes down. Will you arrange to have everyone removed from the swamp area before that time? Never mind trying to guard the place; you'll just lose more lives if you do. Warn everyone to keep inside the buildings with all doors and windows closed tight. Get all the women and children and everyone else who isn't needed here off the post before dark. Send them to Aberdeen or Baltimore or anywhere. . . . No, sir, the sick had better not be moved. I think they will be safer in the hospital than they would be elsewhere. . . . Yes, sir, that's all. Thank you."

DR. BIRD turned to the waiting Carnes.

"Did you locate Miss Andrews?" he asked.

"No, I didn't and that is what I want to talk to you about. I just started to telephone when a hurry call came through from Washington for me and I took it. It was Haggerty on the wire. He followed your precious secretary from the Bureau of Standards over to the Public Health Office and waited for her to come out. She stayed in the building for about an hour and brought a bundle of papers with her when she returned. She walked toward the State, War and Navy Building and Haggerty followed.

"On Pennsylvania Avenue, she was stopped by two men whom Haggerty describes as dark, swarthy, bearded Europeans of some sort. He tried to overhear their conversation but it was in a language which he did not recognize. He got only one word. The

girl called one of them 'Denberg.'"

"Denberg!" cried the doctor, "Why, he's one of the Young Labor crowd, but he's in Atlanta."

"He was, Doctor, but I telephoned Atlanta and found that he had been released last month. After several minutes of talk the two men and your secretary went off together in perfect amity with Haggerty following. The trio got into a waiting car and Haggerty trailed them in a taxi. They drove around town rather aimlessly for some time and then left the car and walked. Haggerty was afraid he would lose them in the crowd so he closed in on them. He doesn't know what happened except that he felt a sudden stab in his arm and everything went black. He recovered in the police station twenty minutes later but the birds had flown."

"The devil!" cried Dr. Bird, consternation in his voice. "Of course, it's easy to see what happened. They spotted him and a confederate slipped a hypo into his arm. What worries me is the fact that they've got Thelma."

"I HOPE they kill her," snapped Carnes vindictively. "She was never kidnaped in broad daylight. Haggerty says she went with them quite willingly and talked and laughed with them. She has deserted, if she wasn't simply acting as a spy from the first. I didn't trust her at all."

"I hate to admit that my judgment is that rotten, Carnes, but the evidence certainly points that way. At that, I think I'll reserve final judgment until later. Now, in view of what you have learned, I have a job for you."

"It's about time, Doctor. I have been rather useless with all the high-powered science that has been flying around here."

"Well, you'll be in your element now. We know that Denberg is loose and their capture of Thelma is no coincidence. I was pretty sure that Saranoff and his gang were at the bottom of this; now I am certain. They must have introduced something onto the marshes last night which caused the trouble. They could not have come overland very well, for the place is too well patrolled. Had they come by air, they would have attracted attention, even had they used a Bird silencer on their motor, for they couldn't muffle their propeller, especially on a takeoff, and there are plenty of men here who would have recognized it. You might check up on that, but I am confident that they came by water. Launches and boats are continually passing up and down the Chesapeake and its tributaries and one more could easily have escaped notice. The Bush River is at the far end of the Michaelville range and it is navigable for craft of light draft at high tide. Find out whether any strange craft were seen in the vicinity of the proving ground last night. If you draw a blank, go to Perryville and Havre de Grace and see what you can find out there. I have a hunch that their base is more likely to be up the Susquehanna than down toward the coast. Above all, Carnes, don't approach the proving ground by water to-night and don't get near the mouth of the Bush River."

"All right, Doctor. What are you going to do?"

"I'm going down on the swamp and collect samples. Oh, don't look so worried. I know just what I am up against and I will have adequate protection. I'll be in no danger and you would just be in the way. Toddle along, old dear, and report to me by telephone as soon as you have learned anything."

"As you say, Doctor. You'll hear from me the minute I do."

WHEN Carnes had left, Dr. Bird climbed into the waiting car and was driven back to the hospital. Captain Murdock greeted him with a smiling face.

"I don't know how you got on to that treatment, Dr. Bird," he said, "but it is doing the men good. The worst cases haven't been affected much, one way or the other, but the progress of the malady in the mild cases from the stables has been completely checked. I think they have a chance now."

"They'll be all right if the destruction and coagulation of tissue hadn't progressed too far before you checked it, Captain. Treat them now for simple lung cauterization and they ought to get well."

"I have some more of those crystals dissected out, Doctor."

"Keep them in the dark until Mr. Davis comes after them. I want to take a few of them back to Washington for study."

"You expect another attack to-night, Doctor?"

"Yes, sometime after sundown."

"What, in heaven's name, is it?"

"Heaven has nothing to do with it, Captain; the stuff comes from the devil's regions and it is the product of a Russian chemist, who I sometimes believe is verily the devil himself. How it's done and what it is, I haven't found out yet, but I am going to investigate a little to-night. The effect is what you have seen. Are you familiar with the various forms of oxygen?"

"The forms of oxygen? Why, there is only one, oxygen gas. Wait a minute though, there is another form, ozone. Are there any more?"

"None that have been previously listed and studied, but at least one other form exists. Those crystals are pure oxygen."

"Impossible! Oxygen is a gas at all ordinary temperatures."

"YES, a gas, but one whose density varies. Oxygen, to which we chemists assign the formula O_2, meaning that its molecule consists of two atoms of oxygen, has a weight of 32 grams per gram molecule. Ozone, to which we assign the formula O_3, meaning that its molecule contains three atoms of oxygen, weighs fifty per cent more or 48 grams per gram molecule. This new form has a density less than water, but tremendously greater than any known gas. I have not yet been able to determine its structure, so I will have to assign to it the formula, O_x, meaning an indefinite number of atoms per molecule. The only name which suggests itself is oxyzone, a combination of oxygen and ozone.

"The stuff is a polymerization, or condensation, to speak roughly, of the oxygen of the air. The oxygen takes this form which the lungs cannot assimilate except with great difficulty and with great damage to the tissues. The oxyzone will break down rapidly under the influence of sunlight or of any ray whose wave-length is shorter than indigo. As a result, it disappears as soon as the sun is up and it will reappear after dark. That is why I suggested X-rays as a treatment. They have a very short wave-length and will penetrate tissues and affect the particles in the lungs themselves. Once the material is removed from the lungs, the cauterization of the tissue ceases and it is merely a matter of slow recovery."

"It is a marvelous discovery, Doctor. I can foresee great uses for it in medical science if a way can be found to produce it."

"Just now we are much more interested in stopping its production than in producing it. Carry on with the line of treatment I have prescribed and be ready for a busy time to-night."

FROM the hospital, Dr. Bird made his way to the headquarters building where he conferred with Colonel Wesley on the measures being taken to clear the proving ground of all persons not strictly necessary for its guarding. The commanding officer, when he learned Dr. Bird's plans, wished to send guards with him, but the doctor promptly vetoed the scheme.

"My assistant, Mr. Davis, won't be able to fix up more than two masks before dark, Colonel," he said, "and you would just be condemning men to death to send them with me into that fog without proper protection. I can see that you are anxious to know what is causing it, but I'm not ready to tell just yet. I had given your medical officer enough information to enable him to treat the hospital cases scientifically, and to-morrow or the next day I hope to be able to tell you all about it. Now, if you'll pardon me, I'm going to the laboratory to see how Mr. Davis is getting along. It will be dark in three-quarters of an hour and I hope that everyone will stay under cover as much as possible."

Davis looked up as Dr. Bird entered the laboratory.

"I'll have the masks completed in an hour, Doctor," he said, "but I don't know how much value they will be. If the oxygen polymerizes before it enters the body, these masks ought to stop it, but if it polymerizes under the influence of heat and moisture in the lungs, they will be useless."

"I'll have to take a chance on that, Davis. From the description of the fog, I strongly suspect that the process takes place outside the body. Have you had your supper?"

"No, Doctor."

"Neither have I. I'll go over to the officers' mess and get a bite to eat. As soon as you have those masks done, get your supper and then telephone me at the club. If Carnes isn't back, I may have to ask you to drive me down toward Michaelville."

"I'll be very glad to, Doctor."

CARNES had not returned when Davis called Dr. Bird at the officers' club two hours later. Night had fallen and everyone on the proving ground sat behind tightly closed windows with lights blazing on them, wondering whether the finger of death would reach in from the swamp to touch them. The fog had not yet made an appearance on the main post and Dr. Bird had no fear of it when he entered his car and drove down to pick up his assistant.

Davis came out to meet him with a curious hood made of vitiolene and rubber, pulled down well over his head. In his hand he carried a second one. Dr. Bird adjusted the second mask and the two men loaded the rear of the car with apparatus designed for collecting samples of air. The outside of each sample cylinder was heavily coated with black rubberine paint. At a word from the Doctor, Davis took the wheel and drove off along the winding ribbon of concrete which led to the upper end of the Michaelville range.

For a mile they drove through a clear, calm night with no traces of fog apparent. Dr. Bird's eyes continually searched the swamps on both sides of the road.

"Stop!" he said suddenly, his voice coming muffled through the enveloping mask. The car stopped and the Doctor pointed to the west. Over the swamp a few stray fingers of fog were curling up from the water.

LEAVING Davis in charge of the car, Dr. Bird donned rubber hip boots and with a gas cylinder in his hand, splashed through the

water toward the fog. He reached the place with no difficulty and spent ten minutes trying to collect a sample. Finally, with a muttered exclamation, he removed his mask and inhaled deeply a dozen times. Carrying the mask in his hand, he made his way back to the car.

"False alarm," he said as he pulled on his mask. "It was so thin that I couldn't get a sample so I tested it by breathing. There isn't a trace of cough in that fog. Drive on."

A half mile farther along the road, a curtain of fog swept in on them, momentarily hiding the road from view. They were through the belt of fog in a few feet and the car came to a stop. Dr. Bird sprang out, gas cylinder in hand. He returned to the car shortly.

"We may have what we are looking for, Davis," he said, "but I am not at all certain. It looked very much like ordinary fog. Let's go down to the range."

The car drew up between the two main buildings of the Michaelville front. The air was clear as far as they could see, but from under the north building, a tiny wisp of fog was coming. As it came under the glare of the three huge arc-lights which flooded the ground with light, it grew more tenuous and gradually dissipated into nothingness. With an exclamation of satisfaction, Dr. Bird bent down and thrust the end of a cylinder under the building. He removed it in a moment as the fog began to stream from the upper end. Carefully he closed the petcocks of the tube and replaced it in the car. He filled a half dozen tubes before he was satisfied.

"I'd like to go down to the water," he said through his mask. "What kind of a jigger do they run on that track?"

"It's a Ford scooter, I was told. It's probably in that shed."

HALF an hour later the two men were running the scooter down the four miles of narrow gage track which separated Michaelville from the Bush River. A few scattered patches of fog could be seen on either side of the track, but none were of sufficient thickness to warrant much success in sample taking. At the water front Dr. Bird looked across the half mile wide river and grunted.

"The tide won't be in for another three hours," he said. "Right now there isn't over sixteen inches of water in there."

Carnes was waiting in the well lighted laboratory when they drove up.

"All right, Davis," said the doctor, "get busy on those samples. If you can't make out the first two, don't crack the others but leave them for me. Give Carnes your mask; he'll drive the rest of the night.

"What luck, Carnesy?" he asked, as the detective, wearing Davis' mask, drove toward the officers' club.

"No stray plane landed or even flew over here last night so far as I could learn. Most of the boats on the bay were either known or lent themselves to ready identification. There were four that I couldn't exactly place, but I think we can safely discard all but one. Some fishermen were pulling nets on the bay about half a mile outside the mouth of the Bush River last night. About eleven, a boat running without lights passed them. They said that they could not hear an engine running, but just a dull hum and the gurgle of a propeller. They hailed it, but got no answer. It faded away into the darkness and they think it was headed toward the mouth of the Bush River. They had their nets up and reset in another hour but the boat didn't reappear."

"Hmm. High tide was at ten minutes after midnight. There was plenty of water in the river at that hour. It sounds promising."

"I thought of telephoning Washington and getting a Coast Guard cutter put on patrol in the bay but I didn't like to do it without your sanction."

"It might have been a good idea, but on the whole it's probably better that you didn't. Carnes, we'll go down to the water front and see whether anything shows up tonight. High tide will be about eleven-thirty. It's about half-past nine now. We'd better get going."

ON the second drive to Michaelville, the fog patches were quite noticeably denser than they had been earlier in the evening. Three times the car had to pass through bands of fog which covered the road. As they passed the second one Carnes suddenly began to cough.

"What's the matter, old man?" cried Dr. Bird, a note of anxiety in his voice. For a few moments Carnes could not answer for coughing. He seized the mask to tear it from his head but Dr. Bird restrained him. In a few minutes his voice became intelligible.

"It seemed like that fog bit right into my lungs, Doctor," he gasped. "I felt as if I were choking. It's better now."

"Are you sure your mask isn't leaking, Carnes? It'll be all up with you if it does. Test it."

The detective closed the intake valve of the mask and expelling all of the air from his lungs, took a deep breath. The air whistled noisily in through the outlet valve.

"The devil!" cried the doctor. "Take that mask off and let me look at it."

A few moments were enough to make the needed repairs and they drove on. Carnes still coughed from time to time. At Michaelville, they started the scooter and ran down the track to the river. They secreted the scooter under the parapet on the water pent-house and walked to the river's edge.

"There's no telling just where they may land, Carnes," said the doctor reflectively, "but this looks like the most likely place. I'll tell you what we'll do. The river narrows a good deal about half a mile east of here. You go up to the narrows and keep watch while I stay here. If any craft passes you, follow it upstream until you find me. If they land, handle the situation as well as you can alone. If you hear any shooting, come as fast as you can leg it. I'll do the same."

THE detective stole away into the darkness and Dr. Bird settled himself for a long vigil. For an hour nothing broke the stillness of the night. Suddenly the doctor was on his feet, peering downstream. A faint purring murmur came over the water, so faint that no one with less sensitive ears than the doctor's could have detected it. Assured after a few minutes of listening that some kind of a craft was coming up the river, the doctor sank back into his hiding place, an automatic pistol firmly grasped in his long tapering fingers.

The purr came nearer, but it was not appreciably louder. The gurgle of water past the prow of the boat could be heard and Dr. Bird could see a long ribbon of white on the water where the craft was passing. He stepped from his cover and leaned forward, straining his eyes to see the boat. It passed beyond him and continued up the river. He stepped quickly along the river bank, trying to keep it in sight. Suddenly he paused. The boat had turned and was coming back. Hur-

riedly he returned to his hiding place.

The boat came down the river until it was opposite the point where he crouched, and then it turned and came in toward the shore. Dr. Bird gripped his pistol and waited. When the craft was less than twenty feet from shore it stopped and a guttural voice spoke. Dr. Bird started. He had expected the language to be Russian, but it came as a shock to him, nevertheless. He strained his ears and cursed his inability to make out the words. Dr. Bird had been assiduously studying Russian under the tutelage of his new secretary for some months, but he had not yet progressed to the stage where he could readily understand it. The gift of languages was one which the erudite doctor did not possess.

THE boat lay motionless for several minutes. Nervously the doctor glanced at his wrist watch. He barely stifled a cry of amazement. From the face of the luminous dial, long streamers of faintly phosphorescent light were streaming. He whirled to meet an attack from the rear but he was too late. Even as he turned the muzzle of a pistol pressed into his back and a voice spoke behind him.

"Drop that pistol, Doctor, or I'll be under the unpleasant necessity of making a hole in you."

Reluctantly, Dr. Bird dropped his pistol and the voice went on.

"Really, I hardly expected to catch you by surprise, Doctor. I thought you were clever enough to realize that our boat would be equipped with an ultra-violet searchlight. However, even the best minds must rest sometimes, and yours is due for a nice long rest. In fact, I might almost prophesy that it will be a permanent rest."

Dr. Bird shivered despite himself at the cold mercilessness of the railing voice behind him. The accents were ones which he did not recognize. His captor chuckled for a few moments and then called out in Russian. The boat came into the shore and eight figures climbed out. Two of them bore a small chest which they set down on the wharf. One of the figures picked up the doctor's automatic and his captor stepped in front. A flashlight gleamed for an instant and Dr. Bird started in surprise. The men wore no masks but only a plate of glass which protected their cheeks and eyes. Fastened to the neck of each one, below the chin, was a long tube which gleamed like glass. They wore heavy knapsacks strapped to their backs from which wires ran to each end of the bars.

"Those protectors make your enveloping head-mask look rather clumsy, don't they, Doctor?" said his captor mockingly. "It's too bad you didn't think of them first. It must be such a blow to your pride to think that anyone had invented something better than yours. Really, that mask of yours worries me. Remove it!"

AT his words two of the men stepped forward and tore the doctor's mask roughly from his head. The mocking voice went on.

"In view of the fact that you have only a few hours of life left, Dr. Bird, it will give me pleasure to let you know how thoroughly you have been defeated. You may not know me by sight, although my name may not be unfamiliar. I am Peter Denberg."

He turned the flashlight for an instant on his own face, and Dr. Bird gazed at him keenly.

"I'll know you the next time I see you," he muttered, half to himself.

"The next time you see me will be in the hereafter, if there be such a thing," laughed the Russian. "The

sweetest blow of all is now about to fall. We expected you to be here and came prepared to capture you. Had we not known that the arch enemy of the people would be here to-night, we would have struck at a point miles away. Do you know who betrayed you? It was one we placed in your laboratory for the very purpose which she served."

He turned on the light again and it picked out of the darkness another face, a long oval face with startlingly red lips and dark oval eyes which glowed as with an internal flame. As the face became visible, the red lips drew back, exposing strong white teeth and the words were literally spat out.

"Swine!" she hissed. "Bourgeois! Did you think you could bribe me with your gifts to tolerate your vileness? I have brought about your downfall and death, Dr. Bird, I, Feodrovna Androvitch! Now will I avenge my brother's death at your hands!"

She sprang forward and spat full in the doctor's face. Dr. Bird fell back for an instant under the ferocity of her attack and long nails ripped the skin from his face. Denberg stepped forward and caught her wrists.

"Gently, sister," he warned. Feodrovna struggled for an instant but gave way to the powerful muscles of the communist leader. "There is no need for anything of that sort," he went on. "In a few moments we will open the chest which we have and then you will enjoy the amazing spectacle of the man who has temporarily checked the plans of our leader a dozen times, gasping for breath like a fish out of water. Start your protectors."

EACH of the Russians closed a switch on the knapsack which he wore. From the bars below their chins came a dull violet glow which made their faces stand out eerily in the darkness. The flashlight was centered on the box which Dr. Bird could see was made of lead, soldered into a solid mass. At a word from Denberg, one of the Russians stepped forward with a long knife in his hand and started to cut open the box.

With a sudden effort, Dr. Bird shook himself loose from the two men who were holding him and sprang forward. Denberg turned to meet him and the doctor's fist shot out like a piston rod. Full on the Russian's chin it landed and he went down like a poled ox. Two of the Russians closed with him but the two were no match for Dr. Bird's enormous strength, fighting as he was for his life. He hurled one away and swung with all of his strength at the other. His blow struck glancingly, and while the Russian spun away under the blow, he did not fall. A man caught at him from the rear and Dr. Bird whirled, but as he did so, two men seized his arms from behind. Mightily the doctor strove but others flung themselves on him. He straightened up with a superhuman effort and then from an unexpected source came help.

One of the men holding him gave a choking gasp and reeled sideways. Dr. Bird felt his neck deluged with liquid and the smell of hot blood rose sickeningly on the air. He shook himself loose again and smote with all of his strength at his nearest opponent. His blow landed fair but at the same instant an iron bar fell across his arm and it dropped limp and helpless. Again a knife flashed in the darkness and a howl of pain came from the Russian who felt it bite home.

"We are attacked!" cried one of them. They whirled about, their flashlights cutting paths through the thickening fog. With her back

to the crippled doctor's Feodrovna Androvitch held aloft a bloody knife.

Something seemed to catch Dr. Bird by the throat and shut off his breath. From a gash which had been cut in the lead box, a heavy gray fog was rising and enveloping everything in its deadening blanket. The fog penetrated into the doctor's lungs and an intolerable pain, as though hot irons were searing the tissues, tore him. He tried to cough, but the sound could not force its way through his stiffening lips. Darkness closed in on him and he swayed. He was dimly conscious that the Russians were swarming about Feodrovna, knives and clubs in their hands. Then through the night came an earsplitting crack and a flash of orange flame. One of the Russians toppled and fell forward, knocking the weakened doctor down as he did so. Again came a flash and a report, and to the doctor's fading senses came a sound of shouts and pounding feet. Over his head another flash split the fog and then darkness swarmed in and with a sigh of pain, Dr. Bird let his head fall forward on his chest.

HE recovered consciousness slowly and looked about him. He was in a white bed in a strange, yet somehow familiar, place with a ray of light of almost intolerable brilliance boring its way into his brain. He tried to raise his hand and found himself curiously weak. With a great effort he raised his hand until he could see it and let it fall with a cry which came from his lips only as a feeble murmur. His hand was thin almost to the point of emaciation. Blue veins stood out on the back and his long, slim, mobile fingers, the fingers of an artist and dreamer, were mere claws with the skin drawn tight over the bones.

A man in a white uniform bent over him. "Drink this, Doctor," came in soothing tones.

He was too weak to protest and he managed to sip the drink through a glass tube. Slowly he felt himself sinking through vast unexplored reaches of darkness.

How long he lay there he did not know but when he again opened his eyes the light was no longer over him. He strove to speak and a husky whisper came from his lips. A tall woman in white hastened forward and bent over him.

"Where am I?" he asked with difficulty.

"You're in the hospital at Aberdeen Proving Ground, Doctor," said the nurse. "Everything is all right and you're doing splendidly. Just don't excite yourself and you'll get well in no time. Captain Murdock will be here in a few minutes."

"How long have I been here?" he asked.

"Oh, quite a while, Doctor. Now don't ask any more questions. You must rest and get well and strong, you know."

Strength seemed to be surging slowly back into the doctor's wasted frame. His voice came clearer and stronger.

"How long have I been here?" he demanded.

THE nurse hesitated, but her face suddenly cleared as Captain Murdock entered the ward.

"Oh, Captain," she cried, "come here and take care of your patient. He won't keep quiet."

"Out of his head again?" asked Captain Murdock as he hastened forward.

"No more than you are," came in a husky whisper from Dr. Bird's lips.

Captain Murdock looked quickly down and smiled in relief. "You'll live, Dr. Bird," he said. "Just take

it easy for a few days and then you can talk all you want to."

"I'll talk now," came in stronger tones from the doctor's lips. "How long have I been here?"

Captain Murdock hesitated, but a glance at the doctor's flushed face warned him that it was better to give in than to fight him.

"You were brought in here two weeks ago yesterday," he said. "It was touch and go for a while, and, but for the treatment you devised, you would have been a goner. We fed you X-rays until I was afraid we would burn you up, but they did the business. It will cheer you up to learn that every man who got your treatment is either well or on the high road to recovery."

"The plague?" asked the doctor faintly.

"Oh, that's all over, thanks to you. It reached the post that night but under the influence of the daylight blue bulbs you had installed, it lost most of its virulence. We had a lot of sore throats in the morning but there wasn't a man dangerously sick. It all faded when the sun hit it."

An orderly entered and spoke in an undertone to Captain Murdock. The surgeon hesitated for a moment, his eyes on Dr. Bird, and then nodded.

"Bring him in," he said quietly.

A SMALL, unobtrusively dressed man entered the room and stepped to the bedside. Dr. Bird's face lighted up in one of its rare smiles and he strove to raise his hand in greeting.

"Carnesy, old dear, I'm glad to see you got out all right," he whispered. "I was afraid your mask wouldn't hold up after the trouble you had with it. Tell me what happened that night."

Carnes glanced at Captain Murdock, who nodded.

"I went down to the narrows and watched, Doctor, and when the Russian boat passed, I started to make my way back to you. The tide had come in and I had to make quite a detour to get to you. I got there a little later than I liked but still in time to do some good. You were down and Miss Andrews was standing over you with a bloody knife in her hand, fighting like a wildcat. I started shooting and ran in yelling as loud as I could. I managed to plug three of them and I guess they thought I was a dozen men. I tried to make enough noise for that many. The rest took to their heels and Miss Andrews and I rigged one of their protectors over your face and dragged you to the scooter. The rest was plain sailing. We brought you in and Captain Murdock did the rest. That's all there was to it. If I hadn't been so slow, I could have driven them off before they opened that box and saved you all of this."

"Thelma?" asked the doctor faintly.

"Oh, she's none the worse, Doctor. I want to apologize to you for the poor opinion I had of your judgment. That girl wasn't recognized; she recognized Denberg on the streets of Washington and deliberately put her head into the lion's mouth by declaring herself. She got their whole plan and went along to try to checkmate them. If she hadn't started knifing when she did, the devils meant to hold your head directly over that box and it would have been just too bad."

"What was in the box?"

"SHE found that out. It was some kind of a microbe that Saranoff developed in a Belgian laboratory which does something to the oxygen of the air. You'll have to get Dr. Burgess to explain that to you later; he has some of the

bugs shut up for you to play with when you get back on the job. When we found that you were knocked out, Davis got him to come down from Washington to take charge. He has been running ray machines over the swamps for two weeks and says that every trace of the bugs are gone except those he has in the laboratory."

"Saranoff has more."

"No, he hasn't, thanks to Miss Andrews. Every day they started a fresh colony, leaving one lot back to start the next brood with. She tipped us off where they were kept and Bolton and Haggerty raided and got the lot and turned them over to Dr. Burgess."

"That's enough for to-day, Mr. Carnes," interrupted Captain Murdock. "You can see Dr. Bird to-morrow, but he has had enough excitement for to-day."

As Carnes took his leave, the nurse spoke to Captain Murdock. He looked carefully at Dr. Bird and nodded.

"For one minute. No longer!" he said.

The nurse stepped to the door. Into the room came a slim young woman of remarkable beauty, her eyes glowing as with an internal light. Her parting lips of startling redness showed strong white teeth. Her eyes grew misty as she leaned over the doctor's bed. Dr. Bird blinked for a moment and his face grew stern.

"Miss Andrews," he said in a husky whisper, "Mr. Carnes has told me what you did. In my service, success does not excuse disobedience. I thank you for your services which may have saved my life and which may have put me in worse danger. In any event, please remember two things. Unless you can learn to entirely suppress your emotions and learn that I will tolerate nothing but implicit obedience, your usefulness to me will be at an end and I will no longer need you."

The happiness faded from the girl's face as if by magic and an expression of absolute immobility took its place. Her eyes looked as though a curtain had been drawn over them.

"Yes, Doctor," she said in a toneless voice as she turned and left the room.

IN THE NEXT ISSUE

The Finding of Haldgren

An Exciting Interplanetary Novelette—a Sequel to "Brood of the Dark Moon"—

By Charles Willard Diffin

Wandl, the Invader

Part Three of the Outstanding Current Novel

By Ray Cummings

—And Others!

The Affair of the Brains

A Complete Novelette

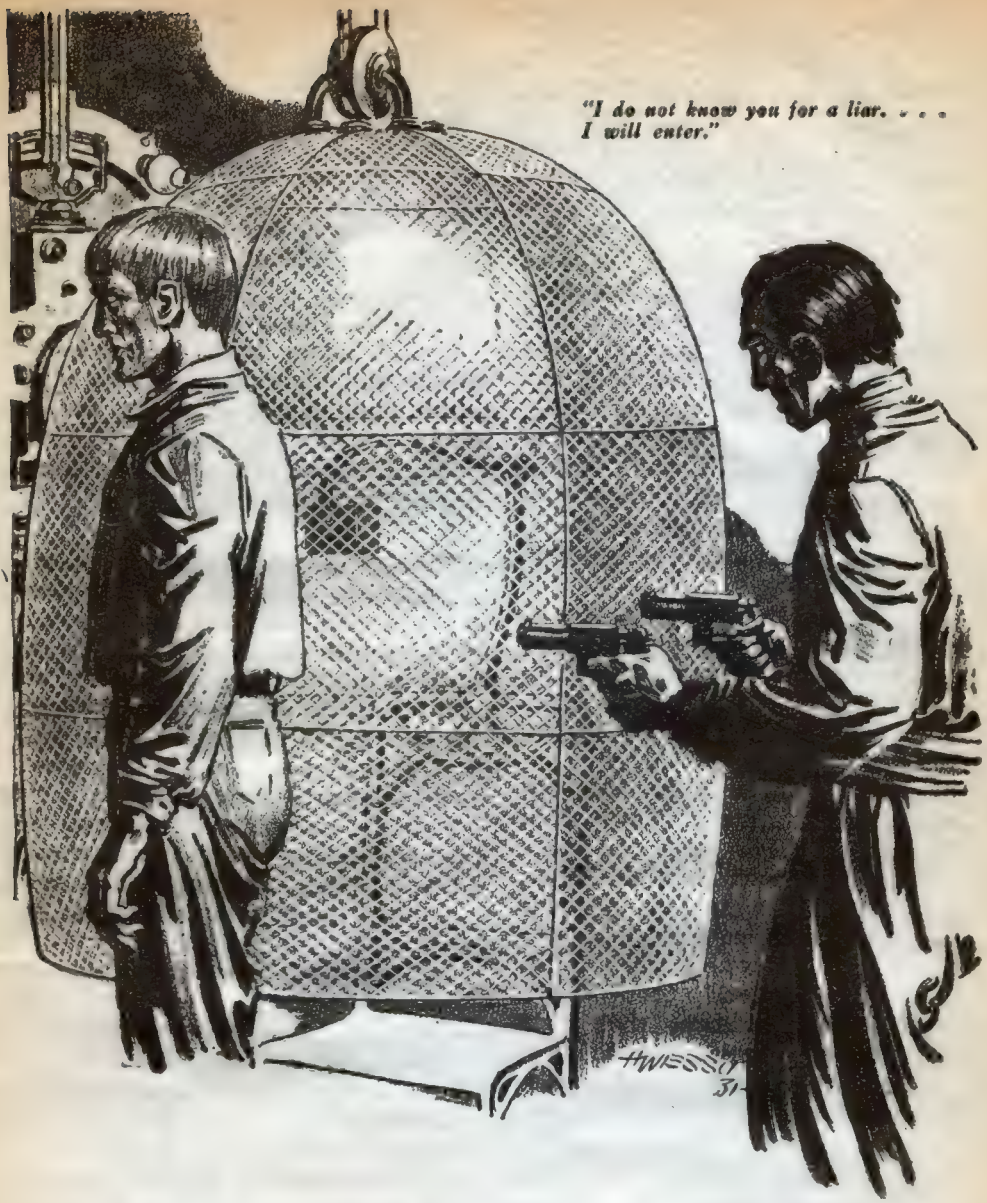
By Anthony Gilmore

CHAPTER I

Off to the Rendezvous

THOUGH it is seldom nowadays that Earthmen hear mention of Hawk Carse, there are still places in the universe where his name retains all its old magic. These are the lonely outposts of the farthest planets, and here when the outlanders gather to yarn the idle hours away their tales conjure up from the past that raw, lusty period before the patrol-ships came, and the slender adventurer, gray-eyed and with queer bangs of hair obscuring his forehead, whose steely will, phenomenal ray-gun draw and reckless space-ship maneuverings combined to make him the period's most colorful figure. These quali-

Hawk Carse himself goes to keep Judd the Kite's rendezvous with the sinister genius Ku Sui.



"I do not know you for a liar. . . . I will enter."

ties of his live again in the outlanders' reminiscences and also of course his score of blood-feuds and the one great feud that shook whole worlds in its final terrible settling—the feud of Hawk Carse and Dr. Ku Sui.

Again and again the paths of the adventurer and the sinister, brilliant Eurasian crossed, and each crossing makes a rich tale. Time after time Ku Sui, through his several bands of space-pirates, his individual agents and his ambitious web of power insidiously weaving over the universe, whipped his tentacles after the Hawk, and always the tentacles coiled back, repulsed and bloody. An almost typical episode is in the affair which followed what has been called the Exploit of the Hawk and the Kite.

It will be remembered—as related in "Hawk Carse"*—that Dr.

*See the November, 1931, issue of Astounding Stories.

Ku laid a most ingenious trap for Carse on the latter's ranch on Iapetus, eighth satellite of Saturn. Judd the Kite, pirate and scavenger, was the Eurasian's tool in this plot, which started with a raid on the ranch. The fracas which followed the Hawk's escape from the trap was bloody and grim enough, and resulted in the erasure of Judd and all his men save one; but the important thing to the following affair was that Judd's ship, the *Scorpion*, fell into Carse's hands with one prisoner and the ship's log, containing the space coordinates for a prearranged assignation of Judd with Ku Sui.

All other projects were postponed by the Hawk at this opportunity to meet Dr. Ku face to face. The trail of the Eurasian was the guiding trail of his life, and swiftly he moved along it.

There was work to be done before he could set out. Three men had emerged alive from the clash between the Hawk and the Kite: Carse himself, Friday, his gigantic negro companion in adventure, and a bearded half-caste called Sako, sole survivor of Judd's crew. Aided sullenly by this man, they first cleaned up the ravaged ranch, burying the bodies of the dead, repairing fences and generally bringing order out of confusion. Then, under Carse's instructions, Friday and the captive brigand tooled the adventurer's own ship, the *Star Devil*, well into the near-by jungle, while the Hawk returned to the *Scorpion*.

He went into her control cabin, opened her log book and once more scanned what interested him there. The notation ran:

"E. D. (Earth Date) 16 January, E. T. (Earth Time) 2:40 P. M. Meeting ordered by Ku Sui, for purpose of delivering the skeleton and clothing of Carse to him, at N. S. (New System) X-33.7; Y-24I.3; Z-92.8 on E. D. 24 January, E. T. 10:20 P. M. Note: the ship is to stand by at complete stop, the radio's receiver open to Ku Sui's private wave (D37, XI293, R3) for further instructions."

He mulled over it, slowly stroking his flaxen bangs. It was a chance, and a good one. Judd's ship would keep that rendezvous, but it would sheathe the talons of the Hawk. This time a trap would be laid for Ku Sui.

THE plan was simple enough, on the face of it, but the Eurasian was a master of cunning as well as a master of science, and high peril attended any matching of wits with him. Carse closed the log, his face bleak, his mind made up. A shuffle of feet brought his gaze up to the port-lock entrance.

Friday, stripped to shorts, a sweat-glistening ebony giant, stood there. Shaking the drops of steaming perspiration from his face, he reported:

"All finished, suh—got the *Star Devil* in the jungle where you said to hide her. An' now what? You still figurin' on keepin' that date with Dr. Ku in this ship?"

Carse nodded, absently.

"Then where'll we pick up a crew, suh? Porno? It's the nearest port, I reckon."

"I'm not taking any crew, Eclipse."

Friday gaped in surprise at his master, then found words:

"No crew, suh? Against Ku Sui? We'll be throwin' our lives—"

"I've lost enough men in the last two days," Carse cut in shortly. "And this meeting with Dr. Ku is a highly personal affair. You and I and Sako can run the ship: we've got to." One of the man's rare smiles relaxed his face. "Of course," he murmured, "I'm risking your

life, Eclipse. Perhaps I'd better leave you somewhere?"

"Say!" bellowed the negro indignantly.

The Hawk's smile broadened at the spontaneous exclamation of loyalty.

"Very well, then," he said. "Now send Sako to me, and prepare ship for casting off."

But as Friday went aft on a final thorough inspection of all mechanisms, he muttered over and over, "Two of us—against Ku Sui! Two of us!" and he was still very much disturbed when, after Carse had had a few crisp words with the captive Sako, telling him that he would be free but watched and that it would be wise if he confined himself to his duties, the order came through to the engine room:

"Break ground!"

Gently the brigand ship *Scorpion* stirred. Then, in response to the delicate incline of her space-stick, she lifted sweetly from the crust of Iapetus and at ever-increasing speed burned through the satellite's atmosphere toward the limitless dark leagues beyond.

The Hawk was on the trail!

CARSE took the first watch himself. Except for occasional glances at the banks of instruments, the screens and celestial charts, he spent his time in deep thought, turning over in his mind the several variations of situation his dangerous rendezvous might take.

First, how would Ku Sui contact the *Scorpion?* Any of three ways, he reasoned: come aboard from his own craft accompanied by some of his men; stay behind and send some men over to receive the remains of the Hawk—for either of which variations he was prepared; or, a third, and more dangerous, direct that the remains of Carse be brought over to his ship, without showing himself or any of his crew.

Whatever variations their contacting took, there was another consideration, Carse's celestial charts revealed, and that was the proximity of the rendezvous to Jupiter's Satellite III, less than three hundred thousand miles. Satellite III harbored Port o' Porno, main refuge and home of the scavengers, the hi-jackers, and out-and-out pirates of space, so many of whom were under Ku Sui's thumb. Several brigand ships were sure to be somewhere in the vicinity, and one might easily intrude, destroying the hairbreadth balance in Carse's favor. . . .

There was peril on every side. The Hawk considered that it would be wise to make provision against the odds proving too great. So, his gray eyes reflective, he strode to the *Scorpion's* radio panel and a moment later was saying over and over in a toneless voice:

"XX-I calling XX-2—XX-I calling XX-2—XX-I calling XX-2. . . ."

AFTER a full two minutes there was still no answer from the loudspeaker. He kept calling: "XX-I calling XX-2—XX-I calling XX-2—XX-I calling—"

He broke off as words in English came softly from the loudspeaker:

"XX-2 answering XX-1. Do you hear me?"

"Yes. Give me protected connection. Highly important no outsider overhears."

"All right," the gentle voice answered. "Protected. Go ahead, old man."

The Hawk relaxed and his face softened. "How are you, Eliot?" he asked almost tenderly.

"Just fine, Carse," came in the clear, cultured voice of Master Scientist Eliot Leithgow, probably the greatest scientific mind in the solar system, Ku Sui being the only possible exception. He spoke now from his secret laboratory on Jup-

iter's Satellite III, near Porno, this transcendent genius who, with Friday, was one of Carse's two trusted comrades-in-arms. "I've been expecting you," he went on. "Has something happened?"

"I'm concerned with Ku Sui again," the Hawk told him swiftly. "Please excuse me; I have to be brief. I can't take any chances of his hearing any of this." He related the events of the last two days: Judd's attack on the Iapetus ranch, the subsequent fight and outcome, and finally his present position and intention of keeping the rendezvous. "The odds are pretty heavily against me, M. S.," he went on. "It would be stupid not to admit that I may not come out of this affair alive—and that's why I'm calling. My affairs, of course, are in your hands. You know where my storerooms and papers are. Sell my trading posts and ranches; Hartz of Newark-on-Venus is the best man to deal through. But I'd advise you to keep for yourself that information on the Pool of Radium. Look into it sometime. I'm in Judd's ship, the *Scorpion;* our *Star Devil's* on Iapetus, hidden in the jungle near the ranch. That's all, I think."

"Carse, I should be with you!"

"No, M. S.—couldn't risk it. You're too valuable a man. But don't worry, you know my luck. I'll very likely be down to see you after this meeting, and perhaps with a visitor who will enable you once again to return to an honorable position on Earth. Where will you be?"

"In eight Earth days? Let's make it Porno, at the house you know. I'll come in for some supplies and wait for you."

"Good," the Hawk said shortly. "Good-by, M.S."

He paused, his hand on the switch. There came a parting wish:

"Good luck, old fellow. Get him! *Get him!*"

The Master Scientist's voice trembled at the end. Through Ku Sui he had lost honor, position, home—all good things a man on Earth may have; through Ku Sui he, the gentlest of men, was regarded by Earthlings as a black murderer and there was a price on his head. Hawk Carse did not miss the trembling in his voice. As he switched off, the adventurer's eyes went bleak as the loneliest deeps of space. . . .

CHAPTER II

The Coming of Ku Sui

STRAIGHT through the vast cold reaches that stretched between one mighty planet and another the *Scorpion* arrowed, Carse and Friday standing watch and watch, Sako always on duty with the latter. Behind, Saturn's rings melted smaller, and ahead a dusky speck grew against the vault of space until the red belts and one great seething crimson spot that marked it as Jupiter stood out plainly. By degrees, then, the ship's course was altered as Carse checked his calculations and made minor corrections in speed and direction. So they neared the rendezvous. And a puzzled furrow grew on Friday's brow.

What was bothering his master? Instead of becoming more impassive and coldly emotionless as the distance shortened, he showed distinct signs of worry. This might be natural in most men, but it was unusual in the Hawk. Often the negro found him abstractedly smoothing his bangs of hair, pacing the length of the control cabin, glancing, plainly worried, at the visi-screen. What special thing was wrong? Friday wondered again and again—and then, in a flash, he knew.

"Why—how we goin' to *see* Dr. Ku?" he burst out. "Didn't that Judd say somethin'—"

The Hawk nodded. "That's just the problem, Eclipse. For you'll remember Judd said that Ku Sui 'comes out of darkness, out of empty space.' That might mean invisibility or the Fourth Dimension —and God help us if he's solved the problem of dimensional traveling. I don't know—but it's something I can't well prepare against." He fell to musing again, utterly lost in thought.

A DAY and a half later found Friday genuinely worried—an unusual state for the always cheerful black. The laugh wrinkles of his face were re-twisted into lines of anxiety which gave his face a most solemn and lugubrious expression. From time to time he grasped the butt of his ray-gun with a grip that would have pulped an orange; occasionally his rolling brown eyes sought the gray ones of the Hawk, only to return as by a magnet to the visi-screen, whose five adjoining squares mirrored the whole sweep of space around them.

Jupiter now filled one side of the forward observation window. It was a vast, red-belted disk, an eye-thrilling spectacle at their distance, roughly a million miles. Against it were poised two small pale globes, the larger of which was Satellite III. Several hours before, when they had been closer to the satellite, Carse had scrutinized it through the electelscope and made out above its surface a silver dot which was a space-ship. It was bound inward toward Port o' Porno, and might well have been one of Ku Sui's. But the *Scorpion*, slowing down for her rendezvous, had attracted no attention and had passed undisturbed.

Now she hung motionless—that is, motionless with respect to the sun. Only the whisper of the air-renewing machinery disturbed the tension in her control cabin where the three men stood waiting, glancing back and forth from the visi-screen to the Earth clock and its calendar attachment. The date the clock showed was 24 January, the time, 10:21 P. M. Dr. Ku Sui was one minute late.

Sako, the captive, was sullen and restless, and made furtive glances at the Hawk, who stood detached, arms hanging carelessly at his sides, gray eyes half closed, giving in his attitude no hint of the strain the others were feeling. But his attitude of being relaxed and off his guard was deceptive—as Sako found out. Suddenly his left hand seemed to disappear; there was a hiss, an arrowing streak of spitting orange light; and Sako was gaping foolishly at the arm he had stealthily raised to one of the radio switches. A smoking sear had appeared as if by magic across it.

Hawk Carse sheathed his gun. "I would advise you to try no more obvious tricks," he said coldly. "Cutting in our microphone is too simple a way to give warning to Dr. Ku Sui. Move away from there. And don't forget your lines when Dr. Ku calls. You will never act a part before a more critical and deadly audience."

Sako mumbled something and rubbed his arm. A pitying smile came to Friday's face as he comprehended what had happened. "You damned fool!" he said.

IT was 10:22 P. M. Still, in the visi-screen, no other ship. Nothing but the giant planet, the smaller satellites poised against it, and the deep star-spangled curtain of black space all around.

They had carefully followed the instructions in the log. They were at the exact place noted there: checked and double-checked. The radio receiver was tuned to the wave-length given in the log. But of Ku Sui, nothing.

And yet, in a way, he was with them. His enigmatic personality, his seldom-seen figure was very present in their minds, and with it were overtones of all the diabolic cunning and suave ironic cruelty that men always associated with him. "He comes out of darkness, out of empty space. . . ." Friday licked his lips. He was not built for mental strain: his lips kept drying and his tongue was as leather.

A little sputtering sound tingled the nerves of the three waiting men, and as one their eyes went to the radio loudspeaker. A contact question was being asked in the usual way:

"Are you there, Judd? Are you there, Judd? Are you there, Judd?"

The voice was not that of Ku Sui. It was a dead voice, toneless, emotionless, mechanical.

"Are you there, Judd?" it went on, over and over.

"The mike switch, Friday," the Hawk said, and then was at Sako's side, his ray-gun transfixing the man with its threatening angle. "Play your part well," was the whisper from his lips.

The switch went over with a click. Trembling, Sako faced the microphone.

"This is Sako," he said.

"Sako?" the dead voice asked. "I want Judd. Where is Judd?"

"Judd is dead. The trap failed, and there was a fight on Iapetus. Judd was killed by Carse, and most of the others. Only two of us are left, but we have Carse and the negro, prisoners, alive. What are your instructions?"

A half minute went by, and the three men hardly breathed.

"How do we know you are Sako?" said the voice at last. "Give the recognition."

"The insignia of Dr. Ku Sui?"

"Yes. It is—"

Carse's ray-gun prodded the stomach of the sweating Sako.

"An asteroid," he said hastily, "in the center of a circle of the ten planets."

The unseen speaker was quiet. Evidently he was conferring with someone else, probably Ku Sui.

"All right," his toneless voice came back at last. "You will remain motionless in your present position, keeping your radio receiver open for further instructions. We are approaching and will be with you in thirty minutes."

Carse motioned to Friday to switch off the mike. Sako sank limply into a chair, soaked with perspiration.

"Now we must wait again," the Hawk murmured, crossing his arms and scanning the visi-screen.

THEY had heard from Ku Sui, but that had not answered the old tormenting question of how he would come. It was more puzzling than ever. The visi-screen showed nothing, and it should have shown the Eurasian's decelerating ship even at twice thirty minutes' time away. They looked upon the same vista of Jupiter and his satellites, framed in eternal blackness; there was no characteristic steely dot of an approaching ship to give Carse the enemy's position and enable him to shape his plan of reception definitely.

Twenty minutes went by. The strain the Hawk was under showed only in his pulling at the bangs of flaxen hair that covered his forehead as far as the eyebrows. He had, from Judd's words, expected a mystery in Ku Sui's approach. There was nothing to do but wait; he had made what few plans and preparations he could in advance.

Friday broke the tense silence in the control cabin. "He's *got* to be *somewhere!*" he exploded. "It isn't natural for the screen not to show nothin'! Isn't there somethin' we can do?"

The Hawk was surprisingly patient. "I'm afraid not," he said. "It's invisibility he's using, or else the fourth dimension, as Judd said. But we've got one good chance. He'll send more instructions by radio, and surely, after that, his ship will appear—"

A new voice, bland and unctuous, spoke in the control cabin from behind the three men.

"Not necessarily, my honored friend Carse," it said. *"You will observe there is no need for a ship to appear."*

Ku Sui had come.

CHAPTER III

The Wave of a Handkerchief

HE stood smiling in the doorframe leading aft to the rear entrance port. There was all grace in his posture, in the easy angle at which one arm rested against the side bulkhead, in the casual way in which he held the ray-gun that bored straight at Carse. Height and strength he had, and a perfectly proportioned figure. Beauty, too, of face, with skin of clearest saffron, soft, sensitive mouth and ascetic cheeks. His hair was fine and black, and swept straightly back from the high narrow forehead where lived his tremendous intelligence.

It was his eyes that gave him away, his eyes of rare green that from a distance looked black. Slanting, veiled, unreadable beneath the lowered silky lashes, there was the soul of a tiger in their sinister depths. It was his eyes that his victims remembered. . . .

"So you have arrived, Dr. Ku," whispered Hawk Carse, and for a second he too smiled, with eyes as bleak and hard as frosty chilled steel. Their glances met and held —the cold, hard, honest rapier; the subtle perfumed poison. The other men in the cabin were forgotten; the feeling was between these two. Strikingly contrasted they stood there: Carse, in rough blue denim trousers, faded work-shirt, open at the neck, old-fashioned rubber shoes and battered skipper's cap askew on his flaxen hair; Ku Sui, suavely impeccable in high-collared green silk blouse, full-length trousers of the same material, and red slippers, to match the wide sash which revealed the slender lines of his waist. A perfume hung about the man, the indescribable odor of tsin-tsin flowers from the humid jungles of Venus.

"You see I meet you halfway, my friend," the Eurasian said with delicate mock courtesy. "A surpassing pleasure I have anticipated for a long time. *No, no!* I see that already I shall have to ask you a small favor. A thousand pardons: it's my deplorable ability to read your mind that requires me to ask it. Your so justly famed speed on the draw might possibly overcome this advantage"—he raised his ray-gun slightly—"and, though I know you would not kill me—save in the direst emergency, since you wish to take me a living prisoner—I would find it most distressing to have to carry for the rest of my life a flaw on my body. So, may I request you to withdraw your ray-guns with two fingertips and put them on the floor? Observe—your fingertips. Will you be so kind?"

THE Hawk looked at him for a minute. Then silently he obeyed. He knew that the Eurasian would have no compunctions about shooting him down in cold blood; but, on the other hand, even as the man had said, he could not kill Ku Sui, but had to capture him, in order to take him to Earth to confess to crimes now blamed on Eliot Leithgow. "Do as he says, Friday," he instructed the still staring negro; and, like a man in a trance, Friday obeyed.

"Thank you," the Eurasian said. "It was a most friendly thing to do." He paused. "I suppose you are wondering how I arrived here, and why you did not see me come. Well, I shall certainly tell you, in return for your favor. But first—ah, friend Carse—your gesture! A reminder, I assume."

Slowly the Hawk was stroking the bangs of hair which had been trained to obscure his forehead. There was no emotion on his chilly face as he answered, no slightest sign of feeling unless it were a slight trembling of the left eyelid—significant enough to those who could read it.

"Yes," he whispered, "a reminder. I do not like to wear my hair like this, Ku Sui, and I want you to know that I've not forgotten; that, though I'm now in your power, there'll be a day—"

"But you wouldn't threaten your host!" the other said with mock surprise. "And surely you wouldn't threaten me, of all men. Must I point out how useless it has always been for you to match yourself, merely a skilful gunman, against me, against a brain?"

"Usually," the cold whisper came back, "the brain has failed in the traps it has laid for the gunman."

"Only because of the mistakes of its agents. Unfortunately for you, the brain is dealing with you directly this time, my friend. It's quite a different matter. But this small talk—although you honor—"

"Of course you intend to kill me," said the Hawk. "But when?"

Dr. Ku gestured deprecatingly. "You insist on introducing these unpleasant topics! But to relieve your mind, I've not yet decided how I can entertain you most suitably. I have come primarily to ask you one trifling thing."

"And that is?"

"The whereabouts of Master Scientist Eliot Leithgow."

HAWK CARSE smiled. "Your conceit lends you an extraordinary optimism, Dr. Ku."

"Not unfounded, I am sure. I desire very much to meet our old friend Leithgow again: his is the only other brain in this universe at all comparable to mine. And did I tell you that I always get what I desire? Well, will you give me this information? Of course, there are ways. . . ."

For a moment he waited.

The Hawk only looked at him.

"Always in character," the Eurasian said regretfully. "Very well." He turned his head and took in Friday and Sako, standing near-by. "You are Sako?" he asked the latter. "It is most unfortunate that you had to deceive me a little while ago. We shall have to see what to do about it. Later. For the present, move farther back, out of the way. So. You, black one, next to my friend Carse: we must be moving along. So."

Ku Sui surveyed them with inscrutable eyes. Gracefully, he drew close.

Carse missed not a move. He watched the Eurasian draw, from one of the long sleeves of his blouse, a square of lustrous black silk.

"This bears my personal insignia, you see," he murmured. "You will remember it." And he languidly waved it just under their eyes.

Friday stared at it; Carse too, wonderingly. He saw embroidered in yellow on the black a familiar insignia composed of an asteroid in the circle of ten planets. And then alarm lit his brain and he grimaced. There was a strange odor in his nostrils and it came from the square of silk.

"Characteristic, Dr. Ku," he said. "Quite characteristic."

The Eurasian smiled. An expression of stupid amazement came over Friday's face. The design of asteroid

and planets wavered into a blur as the Hawk fought unconsciousness; a short, harsh sound came from his lips; he lurched uncertainly. The negro crumpled up and stretched out on the deck. Carse's desire to sleep grew overpowering. Once more, as from a distance, he glimpsed Ku Sui's smile. He tried to back to the wall; made it; then a heavy thump suggested to his dimming mind that he had collapsed to the deck. He was asleep at once. . . .

CHAPTER IV

Soil

HAWK CARSE awoke with a slight feeling of nausea and the smell of the drug faint in his nostrils. He found he was lying on the floor of a large square cell whose walls and ceiling were of some burnished brown metal and which was bare of any kind of furnishing. In one wall was a tightly closed door, also of metal and studded by the knob of a lock. Barred slits, high in opposite walls, gave ventilation; a single tube set in the ceiling provided illumination.

He was not bound. He sat up and regarded the outflung figure of Friday, lying to one side. Something in his look seemed to reach the giant negro, for, as he watched, the man's eyelids flickered, and a sigh escaped his full lips. He stared up at Carse, recognition, followed by gladness, flooding his eyes. The Hawk smiled also. There were close bonds between these two.

"Lord, I'm sure thankful to be with you, suh!" said the negro with relief. His eyes rolled as he took in the cabinlike cell. "Hmff—nice homey little place," he remarked. "Where do you reckon we are, suh?"

"I think we're at last at that place we have searched so long for—Ku Sui's headquarters, his own spaceship."

It will be remembered by those who have read their history that the Eurasian's actual base of operations was for a long time the greatest of the mysteries that enveloped him. Half a dozen times had the Hawk and his comrade in arms, Eliot Leithgow, hunted for it with all their separate skill of adventurer and scientist, and, although they had twice found the man himself, always they had failed to find his actual retreat.

For those who are unacquainted with the histories of that raw period a hundred years ago, it will be impossible to understand the spell of fear which accompanied mention of Dr. Ku throughout the universe—a fear engendered chiefly by the man's unpredictable comings and goings, thanks to his secret hiding place. Those who were as close to him as henchmen could be—which was not very close—only added to the general mystery of the whereabouts of the base by their sincerely offered but utterly contradictory notions and data. One thing all agreed on: the outlaw's lair was a place most frightening.

Therefore it can be understood why, on hearing the Hawk's opinion, Friday's face fell somewhat.

"Guess that means we're finished, suh," he opined moodily.

CARSE had walked to the lone door and found, as he of course expected, that it was tightly locked. He responded crisply:

"It's not like you to talk that way, Eclipse. We're far from that. We have succeeded in the first step—if, as I suspect, this cell is part of Dr. Ku's real headquarters—and surely before he decides to eliminate us we will be able to learn something of the nature of his space-ship; perhaps how it can be attacked and conquered."

Conversation always cheered the naturally social Friday; he seldom had the opportunity for it with his usually curt master. He objected:

"But what good'll that do us, suh, if we take what we've learned to where it won't help anybody, least of all us? An' what chance we got against Ku Sui now, when we're prisoners? Why, he's a magician; it ain't natural, what he does. Lands in our ship plop right out of empty space! Puts us out with a wave of his handkerchief!" With final misery in his voice he added: "We're sunk, suh. This time we surely are."

Carse smiled at his emotional friend. "All you need is a good fight, Eclipse. It's thinking that disintegrates your morale; you should never try to think. Why—there was an anesthetic on that handkerchief! Simple enough; I might have expected it. As for his getting into our ship, he entered from behind, through the after port-lock, while we were looking for his ship on the visi-screen. I don't understand yet why we could not see his craft. It's too much to suppose he could make it invisible. Paint, perhaps, or camouflage. He might have a way of preventing, from a distance, the registering of his ship on our screen. Oh, he's dangerous, clever, deep—but somewhere there'll be a loophole. Somewhere. There always is." His tone changed, and he snapped: "Now be quiet. I want to think."

HIS face stiffened into a cold, calm mask, but behind his gray eyes lay anything but calmness. Ku Sui's easy assumption that the information as to Eliot Leithgow's whereabouts would be forthcoming from his lips, puzzled him, brought real anxiety. Torture would probably not be able to force his tongue to betray his friend, but there were perhaps other means. Of these he had a vague and ominous apprehension. Dr. Ku was preeminently a specialist in the human brain; he had implied his will to have that information. Suppose he should use something it was impossible to fight against?

And he alone, Hawk Carse, brought the responsibility. He had asked Leithgow where he would be, and he remembered well the place agreed upon. He dared not lose the battle of wits he knew was coming. . . .

His eyes shot to the door. It was opening. In a moment Ku Sui stood revealed there, and behind him, in the corridor, were three other figures, their yellow coolie faces strangely dumb and lifeless above the tasteful gray smocks which extended a little below their belted waists. Each bore embroidered on his chest the planetary insignia of Ku Sui in yellow, and each was armed with two ray-guns.

"I must ask forgiveness, my friend, for these retainers who accompany me," the Eurasian began suavely. "Please don't let them disturb you, however; they are more robots than men, obeying only my words. A little adjustment of the brain, you understand. I have brought them only for your protection; for you would find it would result most unpleasantly to make a break for freedom."

"Of course, *you're* not the one who wants protection!" sneered Friday, with devastating sarcasm. "Or else you'd 'a' brought a whole army!"

But the negro paled a little when the Oriental's green tiger eyes caught him full. It was with a physical shock—such was the power of the man—that he received the soft-spoken reply:

"Yours is a most subtle and entertaining wit, black one; I am overcome with the honor and pleasure of having you for my guest. But perhaps—may I suggest?—that you save your humor for a more suitable occasion. I would like to make the last few hours of your visit as pleasant as possible."

HE turned to Hawk Carse. "I have thought that an inspection of this, my home in space, would

intrigue you more than anything else my poor hospitality affords. May I do you the honor, my friend?"

"You are too good to me," the Hawk replied frostily. "I will duplicate your kindness some day."

The Eurasian bowed. "After you," he said, and waited until Friday and the Hawk passed first through the door. Close after them came the three automatons of yellow men.

The passageway was square, plain and bare, and spaced at intervals by other closed doors. "Storerooms in this wing," the Eurasian explained as they progressed. He stopped in front of one of the doors and pressed a button beside it. It slid noiselessly open, revealing, not another room, but a short metal spider ladder. Up this they climbed, one of the guards going first in the half darkness; then a trap-door above opened to douse them with warm ruddy light. They stepped out.

And the scene that met them took them completely off guard. Friday gasped, and Carse so far lost his habitual poise as to stare in wonder.

Soil! And a great glassy dome!

NOT a space-ship, this realm of Ku Sui. Soil—soil with a whole settlement built upon it! Hard, grayish soil, and on it several buildings of the familiar burnished metal. And overhead, cupping the entire outlay, arched a great hemisphere of what resembled glass, ribbed with silvery supporting beams and struts: an enormous bowl, turned down, and on its other side the glorious vista of space.

Straight above hung the red-belted disk of Jupiter, with the pale globes of Satellites II and III wheeling close, *and all of them were of the same relative size they had appeared when last seen from the Scorpion!*

Dr. Ku smiled unctuously at the puzzlement that showed on the faces of his captives.

"Have you noticed," he asked, "that you are still in the neighborhood of the spot in space where we had our rendezvous? But this isn't another of Jupiter's satellites. Ah, no. This is my own world—my own personally controlled little world!"

"Snakes of the Santo!" Friday gasped, the whites of his eyes showing all around. "Then we must be on an asteroid!"

They were. From the far side of the dome ahead of them the asteroid stretched back hard and sharp in Jupiter's ruddy light against the backdrop of black space. It was a craggy, uneven body, seemingly about twenty miles in length, pinched in the middle and thus shaped roughly like a peanut shell. One end had been leveled off to accommodate the dome with its cradled buildings; outside the dome all was untouched. The landscape was a gargantuan jumble of coarse, hard, sharp rocks which had crystallized into a maze of hollows, crevices, long crazy splits and jagged out-thrusting lumps of boulders. Without an atmosphere, with but the feeblest of gravities and utterly without any form of life—save for that within the dome built upon it—it was simply a typical small asteroid, of which race only the largest are globe-shaped.

"Once," the Eurasian went on softly as they took all this in, "this world of mine circled with its thousands of fellows between Mars and Jupiter. I picked it from the rest because of certain mineral qualities, and had this air-containing dome constructed on it, and these buildings inside the dome. Then, with batteries of gravity-plates inserted precisely in the asteroid's center of gravity, I nullified the gravital pull of Mars and Jupiter, wrenched it from its age-old orbit and swung it free into space. An achievement that would command the respect even of Eliot Leithgow, I think. So now you see, Carse; now you know. *This* is my secret base,

this my hidden laboratory. I take it always with me, and I travel where I will."

The Hawk nodded coldly his acceptance of the astounding fact; he was too busy to make comment. He was observing the buildings, the nature of them, the exits from the dome, how they could best be reached.

THEY stood on the roof of the largest and central building, a low metal structure with four wings, crossing at right angles to make the figure of a great plus mark. The hub was probably Dr. Ku's chief laboratory, Carse conjectured. On each side stood other buildings, low, long, like barracks, with figures of coolies moving in and out. Workshops, living quarters, power-rooms, he supposed; power-rooms certainly, for a soft hum filled the air.

There were two great port-locks at ground level in the dome, one on each side, each sizable enough to admit the largest space-ship and each flanked by a smaller, man-sized lock. To reach them. . . .

"And over there," Dr. Ku's voice broke in, "you see your borrowed ship, the *Scorpion*. But please don't let it tempt you to cut short your visit with me, my friend. It would avail you nothing even if you reached her, for it requires a secret combination to open the port-locks, and my servants' brains have been so altered that they are physically incapable of divulging it to you. And of course I have offensive rays and other devices hidden about—just in case. All rather hopeless, isn't it? But surely interesting.

"Let us go; I have more. Below, in my main laboratory in the center of this building, there's something far more interesting, and it concerns you, Carse, and me, and also Master Scientist Eliot Leithgow." He let the words sink in. "Will you follow me?"

And so they went below again, down the spider ladder into the corridor. There was nothing else to do: the guards, ever watchful, pressed closed behind. But a tattoo of alarm was beating in Hawk Carse's brain. Eliot Leithgow again—the hint of something ominous to be aimed at him, Carse, for the extraction of information he alone possessed: the whereabouts of his elderly friend the Master Scientist.

CHAPTER V

The Color-Storm

THE corridor was stopped by a heavy metal door. As the small party approached, it swung inward in two halves, and a figure clad in a white surgeon's smock emerged. He was a white man, tall, with highly intelligent face but eyes strangely dull and lifeless, like those of the coolie-guards. His gaze rested on Ku Sui, and the Eurasian asked him:

"Is it ready?"

"Yes, lord,"—tonelessly.

"Through here, then, my friends." The door opened and closed behind them as they stepped inside. "This is my main laboratory. And there, friend Carse, is the object which is to concern us."

With one glance the adventurer took in the laboratory. It was a great room, a perfect circle in shape, with doors opening into the four wings of the building. The walls were lined with strange, complicated machines, whose purpose he could not even guess at; in one place there was a table strewn with tangled shapes of wire, rows of odd-bulging tubes and other apparatus; and conspicuous by one door was an ordinary operating table, with light dome overhead. A tall wide screen placed a few feet out from the wall hid something bulky from view. Carse noted all these things; then his gaze went back to the object in the middle of the floor which Ku Sui had indicated.

It was, primarily, a chair, within a suspended framework of steely bars, themselves the foundation for a network of fine-drawn colored wires. Shimmering, like the gossamer threads of a spider's spinning, they wove upward, around and over the chair, so that he who sat there would be completely surrounded by the gleaming mesh.

Within the whole hung a plain square boxlike device, attached to the chair and so placed that it would be directly in front of the eyes of anyone sitting there. Ropes were reeved through pulleys in the ceiling, for raising the wire-ball device to permit entrance. And standing ready around it were four men in surgeons' smocks—white men with intelligent faces and dull, lifeless eyes.

THE Hawk knew the answer to the question he curtly asked. "Its purpose, Dr. Ku?"

"That," came the suave reply, "it will be your pleasure to discover for yourself. I can promise you some novel sensations. Nothing harmful, though, however much they may tire you. Now!" He gave a sign; one of his assistants touched a switch. The wire ball rose, leaving the central seat free for entrance. "All is ready. May I ask you to enter?"

Hawk Carse faced his old foe. There was stillness in the laboratory then as his bleak gray eyes met and held for long seconds Ku Sui's enigmatic green-black ones.

"If I don't?"

For answer the Eurasian gestured apologetically to his guards.

"I see," Carse whispered. There was nothing to be done. Three coolies, each with ray-guns at the ready; four white assistants. . . . No hope. No chance for anything. He looked at the negro. "Don't move, Friday," he warned him. "They'll only shoot; it can do no good. Eight to two are big odds when the two are unarmed."

He turned and faced the Eurasian, holding him with his eyes. "Ku Sui," he said, clipping the words, "you have said that this would not permanently harm me, and, although I know you for the most deadly, vicious egomaniac in the solar system, I am believing you. I do not know you for a liar. . . . I will enter."

The faint smile on the Oriental's face did not alter one bit at this. Carse stepped to the metal seat and sat down.

THE web of shimmering wires descended, cupping him completely. Through them he saw Ku Sui go to a switchboard adjoining and study the indicators, finally placing one hand on a black-knobbed switch and with the other drawing from some recess a little cone, trailing a wire, like a microphone. A breathless silence hung over the laboratory. The white-clad figures stood like statues, dumb, unfeeling, emotionless. The watching negro trembled, his mouth half open, his brow already bedewed with perspiration. But the only sign of strain or tension that showed in the slender flaxen-haired man sitting in the wire ball in the center of the laboratory, came when he licked his dry lips.

Then Dr. Ku Sui pulled the switch down, and there surged out a low-throated murmur of power. And immediately the ball of wire came to life. The fine, crisscrossing wires disappeared, and in their stead was color, every color in the spectrum. Like waves rhythmically rising and falling, the tinted brilliances dissolved back and forth through each other; and the reflected light, caroming off the surfaces of the instruments and tables and walls, so filled the laboratory that the group of men surrounding the fire-ball were like resplendent figures out of another universe.

Ku Sui pressed a button, and the side of the boxlike device nearest Hawk Carse's eyes assumed transparency and started to glow. Beautiful colors began to float over its face, colors never still but constantly weaving and clouding into an infinity of combinations and designs. Eyes staring wide, as if unable to close them to the brilliant kaleidoscopic procession, the adventurer looked on.

FRIDAY knew that his master at that moment was impotent to move, even to shut his eyes, and, with a wild notion that he was being electrocuted, he made a rash rush to destroy the device and free him. He learned discretion when two ray-streaks pronged before him and forced him back; and thereafter he was given the undivided attention of two guards.

From the outside, through the ball of color, Carse was a ghostlike figure. Rigid and quivering, he sat in the chair and watched the color-maelstrom. His face was contorted; his cheek muscles stood out weltlike in his sweat-glistening skin; his eyes, which he could not close, throbbed with agony. But yet he was conscious; yet he still could will.

He defended his secret as best he could. Obviously this machine was being used to force from his mind the knowledge of Eliot Leithgow's whereabouts, and therefore he attempted to seal his mind. He fastened it on something definite—on Iapetus, satellite of Saturn, and his ranch there—and barred every other thought from his head. Mechanically he repeated to himself: "Iapetus, Iapetus—my ranch on Iapetus—Iapetus, Iapetus." Hundreds of times. . . . Hours. . . . Days. . . .

The blinding waves of color rioted about him, submerged him, fatigued him. He had a strong impulse to sleep, but he resisted it.

Days seemed to pass. . . . Years. . . . Eons. All this. . . . Continued without change. . . . To the end of the world. . . .

Dimly he knew that the color-storm was working on him; sensed danger when a great drowsiness stole over him; but he fought it off, his brain beating out hundreds of times more: "Iapetus, Iapetus—I have a ranch there—Iapetus, Iapetus. . . ."

Then came excruciating pain!

AN electric shock suddenly speared him. His nerves seemed to curl up, and for a second his mind was thoroughly disorganized before it again took up the drone about Iapetus. Recovery . . . dullness . . . a kind of peace—and again the shock leaped through him. It was followed by a question from afar off:

"Where is Eliot Leithgow?"

Somehow the question meant a great deal and should not be answered. . . .

Again the stab of agony. Again the voice:

"Where is Eliot Leithgow?"

Again the shock, and again the voice. Alternating, over and over. He could brace himself against the shock, but the voice could in no way be avoided. It was everywhere about him, over, around, under him; he began to *see* it. Desperately he forced his brain on the path it must not leave. He had forgotten years ago why, but knew there must be some good reason.

"Iapetus, Iapetus—I have a ranch there—Iapetus, Iapetus—*Where is Eliot Leithgow?*—Iapetus, Iapetus—I have a ranch there—*Where is Eliot Leithgow*—I have a ranch there—a ranch there—Iapetus, a ranch—*Where is Eliot Leithgow?—Where is Eliot Leithgow?—Where is Eliot Leithgow?*" . . .

After two hours and ten minutes the Hawk crumpled.

He was quite delirious at the time. The combined effect of the pain, the physical and nervous exhaustion of the shocks and light, the endlessly

repeated question, his own close concentration on his Iapetus ranch—these were too much for any human body to stand against. He lost his grip on his mind, lost the fine control that had never been lost before, the control about which he was so vain. And the lump of flesh that was Hawk Carse gave the information that was tearing wildly at its prison.

A stammering voice came from the heart of the color-sphere:

"Port o' Porno, Satellite III—Port o' Porno, Satellite III—Port o' Porno, Sat—"

Dr. Ku Sui interrupted him; leaned forward.

"The house is number—?"

"574—574—574—"

"Ah!" breathed the Eurasian. "Port o' Porno! So near!"

Ku Sui returned the switch and pressed one of the buttons. The pool of colors faded; the laboratory returned to comparative dimness. The machine in its center seemed but a great web of wire.

Slumped in the seat within it was a slender figure, his flaxen head bowed over on his chest, his eyes closed, and sweat still trickling down his unconscious brow.

And lying on the floor was another unconscious figure.

Friday had fainted.

CHAPTER VI

Port o' Porno

THE pirate port of Porno is of course dead now, replaced by the clean lawfulness of Port Midway, but a hundred years ago, in the days before the patrol-ships came, she roared her bawdy song through the farthest reaches of the solar system. For crack merchant ships and dingy space trading tramps alike, she was haven; drink and drugs, women and diversions unspeakable lured to her space ports the cream and scum, adventures and riffraff of half a dozen worlds. Sailors and pirates paid off at her and stayed as long as their wages lasted in the Street of the Sailors; not a few remained permanently, their bodies flung to the beasts of the savage jungle that rimmed the port. There only the cunning and strong could live. Ray-guns were the surest law. Modern scientific progress stood side by side with murderous lawlessness as old as man himself.

The hell town had grown with the strides of a giant, rising rapidly from a muddy street of *tio* shacks to a small cosmetropolis. She was essentially a place of contrasts. Two of the big Earth companies had modern space-ship hangars there, well-lighted, well-equipped, but under their very noses was a festering welter of dark, rutted byways extending all the way to the comparative orderliness of the short, narrow Street of the Merchants, itself flanked by the drunken bedlam of the Street of the Sailors. It can be understood why these men who flew, who needed a whole solar system for elbow room, disdained setting to order the measly few acres of dirt they stopped at, but it is a mystery why, when used to living through vast leagues of space, they endured such narrow streets and cluttered houses. Probably, tired from their long cramped cruises, impatient for their fling, they just didn't care a whoop.

The whole jumble that was this famous space port rested in the heart of Satellite III's primeval jungle.

TALL electric-wired fences girdled Port o' Porno to keep the jungle back. It was equivalent to a death sentence to pass unarmed outside them; the monstrous shapes that lived and fought in the jungle's swampy gloom saw to that. Hideous nightmare shapes they were, some reptilian and comparable only to the giants that roamed Earth in her prehistoric ages. Eating, fighting, breed-

ing in the humid gloominess of the vegetation shrouded swamps, their bellows and roars sometimes at night thundered right through Porno, a reminder of Nature yet untamed. Occasionally, in the berserk ecstasy of the mating season, they hurled their house-high bodies at the guarding fences; and then there was panic in the town, and many lives ripped out before a barrage of rays drove the monsters back.

They were not the only inhabitants native to Satellite III. Deep underground, seldom seen by men, lived a race of man-mole creatures, half human in intelligence, blind from their unlit habitat, but larger than a man and stronger; fiercer, too, when cornered. Their numbers no one knew, but their bored tunnels, it had been found, constituted a lower layer of life over the whole satellite.

Probably more vicious than these native "Three's" of Porno were the visiting bipeds, man himself, who thronged the *kantrans*—which may be defined as dives for the purveying of all entertainments. In them were a score of snares for the buccaneer with money in his pocket and dope in his blood. The open doors on the Street of the Sailors were all loudspeakers of drunken oaths and laughter, pierced now and then by a scream or cry as someone in the sweating press of bodies inside knew rage or fear.

ONE interplanetarily notorious kantran made a feature of swinging its attractions aloft in gilded cages, where all of them, young and old, pale and painted, giant and dwarf, ogled the arrested passers-by and invited sampling of their wares.

Of all kinds and conditions of men were these passers-by. Earthling sailors, white, negro, Chinese and Eurasian, most of them in the drab blue of space-ship crews, but each with a ray-gun strapped to his waist; short, thin-faced Venusians, shifty-eyed, cunning, with the planet's universal weapon, the skewer-blade, sheathed at their sides; tall, sweaty Martians, powerful brutes, wearing the air-rarifying mask that was necessary for them in Satellite III's Earthlike atmosphere. Business men and sightseers, except the most bold, were apt to stay in their houses after their first visit to the Street of the Sailors. Each face on the street or in the kantrans that lined it bore the mark of drink, or the contemptuous, insolent expression bred by Porno's favorite drug, isuan.

Around Porno was the constant threat of savage life; below it were half-human savagery and mystery; above, in the very shadow of their mighty engines of space, were the most vicious animals of all—degraded men.

This was the Port o' Porno of a hundred years ago.

This was the Port o' Porno where Master Scientist Eliot Leithgow for very good reasons had told Hawk Carse he would meet him. 574. The house of his friend.

NIGHT descended suddenly on the outlaw space-port that day the elderly exile waited in vain for his comrade in arms Hawk Carse to show up.

There were six hours when the blasting heat received by Satellite III from near-lying Jupiter would be gone, and in its place a warm, cloying tropical darkness, heavy with the odors of town and exotic products and the damp, lush vegetation of the impinging jungle. The night would be given over to carousing; for these six hours the Street of the Sailors came to life. It was a time to keep strictly in hiding.

In the middle of that night, when the pleasures of Porno were in full stride, there emerged suddenly, from one of the dark, crooked byways that angled off the Street of the Sailors,

a squad of five men whose disciplined pace and regular formation were in marked contrast to the confusion around them. They were slant-eyed men, with smooth saffron faces, and strongly built, and they were armed, each one, with both a ray-gun and a two-foot black, pointed tube. But it was not their numbers, formation or weapons that caused the carousing crowd to fall silent and hastily get out of their path. It was, rather, the insignia embroidered on the breasts of the gray smocks they wore. The insignia represented an asteroid in a circle of the ten planets, and the Street of Sailors knew that sign and dreaded it.

The squad pressed along rapidly. A still-comely woman, new to Porno, plucked smirking at the leader's sleeve; but his pace did not slacken, and she fell back, puzzled and afraid because of her feeling of something lifeless, dumb, machinelike in the man. Ahead, an isuan-maddened Earthling fell foul of a Venusian; a circle cleared in the mob, a ray-gun spat and missed, and the Venusian closed, the gleam of a skewer-blade playing around him. This was combat; this was interesting; but none of the squad's five men gave the fight a glance, or even turned his head when, as they passed, the butchered Earthling coughed out his life.

So they passed, and soon they were gone down another black-throated byway.

They padded noiselessly along in the darkness to turn again presently, pausing finally before a low, steel-walled house, typical of the strongholds of prudent merchants of the port. No lights were visible within it; all seemed asleep.

Silence filled the narrow street, and unrelieved darkness. Occasionally a desultory breeze brought sounds of a burst of revelry from the Street of the Sailors; once the ports of an outbound space-ship flashed overhead for an instant. But there was mainly silence and darkness, and in it the five men, parleying close together in toneless whispers.

After a little they separated. On cat's feet four of them stole around the sides of the house. The fifth, drawing the black, pointed tube from his slash, crept up to the front entrance-port and held the tip to it. Blue light sparkled fantastically, revealing his impassive face, outlining his crouching body. Then, quite suddenly, the port appeared to melt inward, and he disappeared into the blackness of the interior.

Presently there came a stir of movement, a whisper, a rustle from inside. A challenge, shouts volleying forth, a scream, another, and the peculiar rattling sound that comes from a dying man's throat. Then again silence.

Five shadows melted from the front entrance-port. They were carrying something black and still and heavy between them.

The errand was done. . . .

CHAPTER VII

The Coming of Leithgow

HAWK Carse awoke to the touch of a hand on his brow. He came very slowly to full consciousness. His pain was great.

His whole body was sore; every joint, every muscle in it ached; his brain was feverish, pumping turmoil. When he at length opened his eyes he found Friday's face bent close down, tender anxiety written large over it.

"You all right, suh? How do you feel now?"

A harsh sound came from the Hawk's throat. He pressed a hand to his throbbing temple and tried to collect his senses. Sitting up

helped; he glanced around. They were back in the same cell, and they were alone. Then, shortly, he asked:

"Did I tell him?"

"About Mr. M.S., suh?"

"Of course, I can't quite remember—a bit blurred—"

"I guess you did, suh," Friday answered mournfully. "I didn't hear you, but Ku Sui said you told him where Master Leithgow is. But dog-gone—you couldn't help it!"

Carse forgot his pain as his brain straightened these words out into their overwhelming consequence, and something of its old familiar mold, hard and graven, emotionless, came back to his face. His eyes were bleak as he murmured:

"I couldn't help it—no. I really don't think it was possible. But I could have refused to get into the machine. I thought I could resist it. I took that risk, and failed." He stopped short. His body twitched with uncontrolled emotion, and in decency the negro turned his back on his master's anguish. A broken whisper reached him: "I have betrayed Leithgow."

FOR a short while neither man moved, or made any sound. Friday was a little afraid; he guessed what must be going on in Carse's mind, and had no idea what to expect. But the Hawk's next move was quite disciplined; he was himself again.

He got up and stretched his body, to limber its muscles. "How long have we been here?" he asked.

"Don't know suh; I was unconscious when they brought me here myself. But I guess not less'n six or eight hours."

"Unconscious?" asked the Hawk, surprised. "You fought, and they knocked you out?"

The big negro looked sheepish and scratched his woolly head.

"Well, no suh," he explained. "I was aimin' to butt in some, but they wouldn't let me."

"Then how did you get unconscious?"

Friday fidgeted. He was acutely embarrassed. "Don't know, suh, Dog-gone, I just can't figure it, unless I fainted."

"Oh." The Hawk smiled. "Fainted. Well, so did I, I guess. I suppose," he went on seriously, "you couldn't tell whether the asteroid moved or not. I mean toward Satellite III."

Friday scratched his head again.

"I guess I can't, suh," he replied. "I haven't felt any movement."

"The door is locked?"

"Oh, yes, suh. Tight."

"Very well. Now please be silent. I want to think."

He went over and leaned against the far wall of the cell. His right hand rose to the bangs of flaxen hair and with a slow regular movement began to smooth them. Lost in thought he stood there, thinking through the situation in which he found himself.

He had expected, of course, to subject himself to great risk in keeping the rendezvous with Dr. Ku Sui, but he had never thought he would be endangering Eliot Leithgow also. It was torture to know he had put the gentle old scientist into the Eurasian's web.

That was it: if he could not somehow shear through that web, he must destroy Leithgow himself, and follow on after. The scientist would prefer it so. For whatever Dr. Ku's exact reason for wanting the Master Scientist was, it was an ugly one; that it was worse than quick death, he knew full well.

Shear through the web. How? Where was the weak strand in Ku Sui's cunningly laid plot? The Hawk visualized all he could of the asteroid's mechanical details, and surveyed them painstakingly.

Two great port-locks flanked by little ones; secret opening combinations—not much hope in that avenue. Judd's ship, resting above: could he reach it, and raise it and douse the buildings with its rays? No; Dr. Ku had spoken of defense rays—they would certainly be far more powerful than the *Scorpion's*. Then, somewhere there were the mighty gravity-plates batteries which motivated the asteroid and held it controlled in space. The dynamos. Two men, working swiftly, might wreak an unholy amount of damage in little time; in the resulting confusion anything might happen. If!

INTO the depths of his concentration came the odor of tsin-tsin flowers, followed by the familiar, suave voice of his arch-enemy.

"I see you are deep in thought, my friend. I trust it indicates your complete recovery."

Dr. Ku Sui stood smiling in the doorway, his same bodyguard of three armed men behind him. His sardonic words brought no reply. He went on:

"I hope so. I have arranged, thanks to your kindness, a meeting with an old, dear friend of yours. An illustrious friend; he already honors my establishment with his presence. I have come to ask you to join us."

The Hawk's gray eyes turned frigid; a lesser man would have blanched at the threat implied in his answer.

"God help you, Ku Sui."

The Eurasian turned it aside. "Always," he said. "God helps those who help themselves. But come with me, if you'll be so kind. We are expected in the laboratory."

This exchange passed quickly. Friday was still grasping at its underlying meanings as they again filed down the short straight outside corridor. It brought a perverse satisfaction to see the coolie guards bearing their ray-guns unsheathed and ready. Ku Sui's general attitude did not fool him. He knew that the man's suave mockery and flowery courtesy were camouflage for a very real fear of the quick wits and brilliant, pointed action of his famous master, the Hawk.

Carse walked steadily enough, but every step he took beat in his mind like the accents of a dirge. For he had betrayed into the hands of the Eurasian his most loved and loyal friend. Betrayed him! Despicably egotistical he had been in submitting to the chair, in not making one last wild break for freedom at that time. He had thought he could beat Ku Sui at his own game. Ku Sui, of all men!

UNSEEN hands opened from the other side the metal laboratory door, they passed through and the close-fitting halves closed behind them. Ku Sui went to the main switchboard and Carse glanced rapidly around. Leithgow was not there. The wire-ball device was gone, but otherwise the details of the room were unchanged, even to the four white-clad assistants whose fine heads had eyes so lifeless and faces so expressionless. Emphasized, now, somehow, was the tall screen that hid something on one side of the room, and an intuition told the Hawk that what lay behind the screen was in some way connected with their fate.

He waited stolidly for what he knew was coming.

"Now," Dr. Ku murmured. He smiled at his two prisoners and pressed one of the switchboard's array of buttons. A door opposite them swung open.

"Believe me, this is a pleasure," he said.

Flanked by two impressive slant-eyed guards, a frail figure in a rubber apron stood revealed.

Master Scientist Eliot Leithgow

blinked as he looked about the laboratory. Helpless, pitifully alone he looked, with his small, slightly stooped body, his tragedy-aged, deeply-lined face. The blue veins showed under the transparent skin of his forehead; his light-blue eyes, set deep under snow-white eyebrows, darted from side to side, dazed by the light and perhaps still confused by the events which had snatched him so suddenly from his accustomed round and struck him with such numbing force. His years and frailty were obviously fitted rather to some seat of science in a university on Earth than the raw conditions of the frontiers of space.

Hawk Carse found words, but could not control his voice.

"This is the first time I've ever been sorry to see you, M. S.," he said simply.

CHAPTER VIII

Dr. Ku Shows His Claws

THE scientist brushed back his thinning white hair with a trembling hand. He knew that voice. He walked over and put his hands on his friend's shoulders.

"Carse!" he exclaimed. "Thank God, you're alive!"

"And you," said the Hawk.

Ku Sui interrupted.

"I am most glad, honored Master Scientist," he said in the flowery Oriental fashion that he affected in his irony, "to welcome you here. For me it is a memorable occasion. Your presence graces my home, and, however unworthily, distinguishes me, rewarding as it does aspirations which I have long held. I am humbly confident that great achievements will result from your visit—"

Quickly Eliot Leithgow turned and looked squarely at him. There was no bending of spirit in the frail old man. "Yes," he said, "my visit. Your sickening verbal genuflections beautifully evade the details—the house of my friend raided at night; he, himself, unarmed, shot down in cold blood; his house gutted! You are admirably consistent, Dr. Ku. A brilliant stroke, typical of your best!"

Five faint lines appeared across the Eurasian's high, narrow brow. "What?" he exclaimed. "Is this true? My servitors must be reprimanded severely; and meanwhile I beg you not to hold their impetuousness against me."

CARSE could stand it no longer. This suave mockery and the pathetic figure of his friend; the mention of raid and murder—

"It's all my fault," he blurted out. "I told him where you were. I thought—"

"Oh, no!" Dr. Ku broke in, pleasantly protesting. "Captain Carse is gallant, but the responsibility's not his. I have a little machine—a trifle, but most ingenious at extracting secrets which persons attempt to hold from me. The Captain couldn't help himself, you see—"

"It was not necessary to tell me that," said Leithgow.

"Of course," the Eurasian agreed and for the first time seriously; "but let me suggest that the end justifies the means. And that brings me to my point. Master Scientist, now you may know that I have for some time been working toward a mighty end. This end is now in sight, with you here, the final achievement can be attained. An achievement—" He paused, and the ecstasy of the inspired fanatic came to his eyes. Never before had the three men standing there so seen him. "I will explain."

His eyes changed, and imperiously he gave an order to his assistants. "A chair for Master Leithgow, and one for Carse. Place them there." Then, "Be seated," he in-

vited them with a return of his usual seeming courtesy. "I'm sure you must be tired."

Slowly Eliot Leithgow lowered himself into the metal seat. Friday, ignored, shifted his weight from one foot to the other. The Hawk did not sit down until with old habit he had sized up the whole layout of laboratory, assistants and chances. The two chairs faced toward the high screen; to each side stood the five coolie-guards, mechanically alert as always; the four Caucasian assistants made a group of strange statues to the right.

Ku Sui took position, standing before the screen. Seldom did the cold, hard iron of the man show through the velvet of his manner as now.

"Yes," he said, "I will talk to you for a while; give you broad outline of my purpose. And when I have finished you will know why I have wanted you here so badly, Master Leithgow."

HE began, and, as never before, he hid nothing of his monstrous ambition, his extraordinary preparations. With mounting fear his captives listened to his well-modulated voice as it proceeded logically from point to point. He had fine feeling for the dramatic, knew well the value of climax and pause; but his use of them was here unconscious, for he spoke straight from his dark and feline heart.

For the first time in the Affair of the Brains, the tiger was showing his claws.

"For a long time," Ku Sui said, "we four gathered here have fought each other. All over space our conflict has ranged, from Earth to beyond Saturn. I suppose there never have been more bitter enemies; I know there has never been a greater issue. I said we four, but I should have said we *two,* Master Leithgow. Captain Carse has commanded a certain respect from me, the respect one must show for courage, fine physical coordination and a remarkable instinct and capacity for self-preservation—but, after all, he is primarily only like the black here, Friday, and a much less splendid animal. It is a *brain* that receives my respect! A brain! Genius! I do not fear Carse: he is only an adventurer; but your brain, Master Leithgow, I respect.

"For, naturally, brains will determine the future of these planets around us. The man with the most profound and extensive scientific knowledge united to the greatest audacity—remember, audacity!—can rule them every one!"

He paused and looked into the eyes of the Master Scientist. Pointedly he said:

"You, Master Leithgow, have the brains but not the audacity. I have the audacity *and* the brains—now that you are here."

COLD prickles of fear chased down Carse's and the scientist's spine at this obscure threat. Some of their reaction must have shown in their faces, for the Eurasian permitted himself a brief, triumphant smile and added:

"You shall know just what I mean in but a few minutes. Right now, in this very laboratory, the fate of the planets is being decided!"

Hawk Carse licked his dry lips.

"Big words!" he said.

"Easily proved, Captain Carse, as you'll see. What can restrain the man who can instantly command Earth's master-minds of scientific knowledge, the man who has both a considerable brain of his own to call on and the mightiest brains in existence, all coordinated for perfect, instant effectiveness. Why, with these brains working for him, he can become omnipotent; there can be but feeble resistance to his

steps toward universal power! Only chance, unpredictable chance, always at work, always powerful, can defeat him—and my audacity allows me to disregard what I cannot anticipate."

"You talk riddles," answered Leithgow. "You do not explain your intended means. What you imply you can do with brains is utterly impossible."

"Impossible? Ever a foolish word, Master. You know that the brain has always been my special study. As much as ten years ago, I was universally recognized as the greatest expert in my specialty. But I tell you that my knowledge of the subject was as nothing then to what it is now. I have been very busy these last ten years. Look!"

With a graceful sweep of a hand he indicated the four coolie-guards and his four white-smocked assistants.

"These men of mine," he continued, "do they appear normal, would you say? Or, rather, mechanicalized; lacking in certain things and thereby gaining enormously in the values which can make them perfect servitors? I have removed from their minds certain superficial qualities of thought. The four men in white were, a few years ago, highly skilled surgeons, three of them brain specialists and noted for exceptional intellects and bold, pioneering thinking. I needed them and took them, diverting them from their natural state, in which they would have resisted me and refused my commands. Certain complicated adjustments on their brains—and now their brains are mine, all their separate skill at my command alone!"

LEITHGOW sat back suddenly, astonishment and horror on his face. His lips parted as if to speak, then closed tightly together again. At last he uttered one word.

"Murderer!"

Dr. Ku smiled. "In a sense, yes. But let me go on.

"The reshaping of these mentalities, and of the mentalities of all my coolies, were achievements, and valuable ones; but I wanted more. I wanted much more. I wanted the great, important part of all Earth's scientific knowledge at my fingertips, under my control. I wanted the exceptional brains of Earth, the brains of rare genius, the brains that lived like lonely stars, infinitely removed from the common herd. And more than that, I wanted them *always;* I wanted them *ageless.* For I had to seal my power!"

The Eurasian's words were coming more rapidly now, though the man's thoughts and tone were still under control; and Carse, sitting there silently, felt that the climax was being reached; that soon something unthinkable, something of dread, would be revealed. The voice went on:

"These brains I wanted were not many—only six in all. Most of them you knew, Master Leithgow, these men who constituted the cream of Earth's scientific ability. Professor Estapp, the good-looking young American; Dr. Swanson, the Swede; Master Scientist Cram—the great English genius Cram, already legendary, the only other of that rank beside yourself; Professor Geinst, the hunchbacked, mysterious German; and Dr. Norman—Dr. Sir Charles Esme Norman, to give him his English title. I wanted these men, and I got them! All except you, the sixth!"

AGAIN Dr. Ku Sui smiled in triumph. To Eliot Leithgow his smile was unspeakable.

"Yes," the elderly scientist cried out, "you got them, you murderer!"

"Oh, no, no, Master Leithgow,

you are mistaken. I did not kill them. Why should I be stupid as to do that? To these men I wanted so badly? No, no. Because these five scientists disappeared from Earth suddenly, without trace, without hint of the manner of their going, the stupid Earthlings believe they were killed! Stupid Earthlings! Abducted, of course; but why assume they were killed? And why, of all people, decide that Master Scientist Eliot Leithgow had something to do with their disappearance? I confess to having planted that evidence pointing to you, but if they had the sense of a turnip they would know that you were incapable of squashing a flea, let alone destroying five eminent brothers in science! You, jealous, guilty of five *crimes passionel! Pour le science!* Credulous Earthlings! Incredible Earthings! And here are you, a hunted man with a price on your head!

"So for ten years you have thought I murdered those five men? No, no. They were very much alive for eight years and very troublesome prisoners. It took me eight years to solve the problem I had set myself.

"You will meet them in a minute—the better part of them. You'll see for yourself that they are very usefully alive. For I succeeded completely with them. *I have sealed my power!*"

His silk pajamalike clothing rustled loud in the strained silence as he turned to the screen behind him. For some obscure reason the perfume about him, flowers of tsin-tsin, seemed to grow in their nostrils.

"Observe!" he said, and lifted it aside. An assistant threw a switch on a nearby panel. The unnatural quiet in the laboratory was resumed.

"The ultimate concentration of scientific knowledge and genius! The gateway to all power!"

CHAPTER IX

The Brain Speaks

A CASE lay revealed.

At first, while it was unlit, it seemed nothing more than that: a case like those glass-sided and glass-topped ones found in museums, a case perhaps three feet high, three feet deep and five feet in width. Under this glass upper part of the case was an enclosed section a little more than a foot in depth. The whole structure was supported at each corner by short strong metal legs. And that was all.

But, second by second, as the captives took in these details, a change came over the interior. No doubt it was the result of the increasing action of some electrical current loosed by the throwing of the switch; the whole insides of the glass case little by little lightened, until it became apparent it was full of a strange liquid that seemed of itself to have the property of glowing with soft light. As this light increased, a row of five shadowy bulks the size of footballs began to take form between what looked, from where the men sat, like a forest of fibers of silk.

In a few more seconds a miracle of complicated wiring came into visibility. The silk fibers were seen to be wires, threads of silver gossamer that interconnected the five emerging bulks in a maze of ordered complexity. Thousands interlaced the interior; hundreds were gathered in each of five close bunches that sprouted from the floor of the case and then spread, fanwise, to various groupings of delicate liquid-immersed instruments.

In several seconds more Eliot Leithgow and Hawk Carse were staring with horror at what the now brilliantly glowing liquid re-

vealed the five shapes to be. As one man they rose, went to the cabinet and gazed with terrible fascination.

"Brains!" exclaimed Leithgow. "Human brains! But not alive—surely not alive!"

"But yes," contradicted the triumphant Eurasian. "Alive."

FIVE human brains lay all immersed in the glowing case, each resting in a shallow metal pan. There were pulsings in narrow gray tubes which led into their under-sides — theatrical evidence that the brains held imprisoned there were, as the Eurasian had said, alive—most strangely, unnaturally and horribly alive. Stark and cruelly naked they lay there, pulsing with life that should not have been.

"Yes, alive!" repeated Ku Sui. "And never to die while their needs are attended!"

One of his long artistic fingers tapped the glass before the central brain, which was set somewhat lower than the others. "This," he said, "is the master brain. It controls and coordinates the thoughts of the others, avoiding the useless, pursuing the relevant and retaining the valuable. It is by far the most important of the five, and is, of course the superior intellect. It is the keystone of my gateway to all power."

Eliot Leithgow's face was deathly white, but, as one in the grip of some devilish hypnotic fascination, he could not tear his eyes away from the revolting, amazing achievement of his brilliant enemy. The Eurasian with the cruelty of a cat picked that awful moment to add:

"This master brain is all that was best of Master Scientist Cram."

The frail old man took this statement like a blow.

"Oh, dear heaven—not Raymond Cram! Not Cram, the physicist, brought to this! Why, I knew him when—"

Ku Sui smiled and interrupted. "But you speak of him as if he were dead! He's not. He's very much alive, as you shall see. Possibly even happy—who knows? There is no good— *Keep back, Carse!*"

HIS tiger's eyes had not missed the adventurer's slight crouch in preparation for a shove which might have toppled the case and ended the abominable servitude of its gruesome tenants. The Hawk was caught before he had well started; and had he not stopped his gathering muscles he would have been dead from the coolie-guards' rays by the time he touched the near side of the case.

He took his failure without comment; only stepped back, folded his arms and burned his enemy with the frigid glare of his eyes. The Eurasian continued as if nothing had happened, addressing himself chiefly to Leithgow.

"The others, too, you once knew; you are even charged with their murder. Let me introduce you once more to your old colleagues and friends. There, at the right, is the brain you once compared notes with in the person of Professor Estapp. Next to him is Dr. Swanson. To the left of Master Scientist Cram, is Professor Geinst, and this last is Dr. Sir Charles Esme Norman. Now think what this group represents!

"Estapp, Chemistry and Bio-Chemistry; Swanson, Psychology; Geinst, Astronomy; Norman, Mathematics. And Cram, the master brain, of course, Physics and Electricity, although his encyclopedic knowledge encompassed every major subject, well fitting his brain for the position it holds. All this, gathered here in one! The five

outstanding intellects of Earth, here gathered in one priceless instrument! Here are my advisors; here my trusty, never-tiring assistants. I can have their help toward the solution of any problem; obtain from their individual and combined intelligences even those rare intuitions which I have found almost always precede brilliant discoveries.

"For they not only retain all they ever knew of science, but they can *develop,* even as brains in bodies can develop. Their knowledge does not become outmoded, if they are kept informed of the latest currents of scientific thought. From old knowledge and new they build their structures of logic once my command sets them on. Wills of their own they have none.

"I have not succeeded in all my secondary alterations, however. For one thing, I have been unable to deprive them altogether of the memory of what they formerly were; but it is a subdued memory, to them doubtless like a dream, familiar yet puzzling. Because of this I imagine they hate me—heartily!—yet they lack the will, the egocentricity which would enable them to refuse to answer my questions and do my work.

"Frankly, without them this whole structure"—his hands swept out widely—"my whole asteroidal kingdom, would have been impossible. Most of my problems in constructing it were solved here. And in the future other problems, far greater, will be solved here!"

HAWK CARSE by now understood very well Dr. Ku Sui's purpose in bringing M. S. Leithgow to his laboratory, and was already goading his brain in search of a way out. Death was by all means preferable to what the Eurasian intended—death self-inflicted, and death that mutilated the brain—but there were no present chances that his searching mind could see.

If Leithgow suspected what was in store, his face gave no sign of it. He only said:

"Dr. Ku, of all the things you have ever done, this is the most heartless and most vile. I would have thought there was a limit in you somewhere, but this—this thing—this horrible life you have condemned these five men to—"

He could not continue. The Eurasian only smiled, and replied, with his always seeming-courtesy:

"Your opinion is natural, Master: I could expect no other. But when great ends are to be gained, he who would gain them must strip himself of those disturbing atavistic things we call the tender emotions. The pathway to power is not for those who wince at the sight of blood, who weep at the need for death. I hope, for special reasons, that you'll make an effort to understand this before we come to the phase which will follow my demonstration. . . .

"Now, please allow me to show you my coordinated brains in useful operation. Will you be seated again? You, too, Captain Carse."

IT was Ku Sui's show: there was nothing for the two men but to obey. But they felt, both of them, a great unnaturalness in being seated for the demonstration to come.

"Thank you," the Eurasian said, and went to the panel flanking the case. There, he turned and remarked: "Before we begin, I must ask you to remember that the opinions of my brains may always be accepted as the probable truth, and always, absolutely, are they honest and without prejudice." He threw a small knife switch and again turned. Nothing seemed to happen.

"I have contrived, of course, an

artificial way of communicating with my helpers. This inset grille here contains both microphone and speaker—ear and mouth.

"The ear picks up my words and transmits them to every brain. If I have asked a question, it is individually considered and the respective answers sent to the master brain; they are there coordinated and the result spoken to me by means of the mechanical mouth. When the opinions of the individual brains do not agree, the answer is in the form of a poll, often with brief mention of points pro and con. Sometimes their meditations take considerable time; but simple questions always bring a prompt and unanimous answer. Shall we try them now?"

The man's spectators did not answer; even the Hawk was for once in his life too overcome by conflicting feelings of horror and dread and compelling morbid fascination. Dr. Ku paused dramatically, a slight smile on his enigmatic lips; then turned his head and spoke into the grille.

"Do you hear me?" he asked, easily and confidently.

The silence in the laboratory was for one brief moment almost overpowering. Then, from the grille, came a thin metallic voice. Inhuman, artificial, it sounded in the tense strain of the silent room, voice from the living dead that it was.

"I do," were its words.

"Strange," mused the Eurasian, half aloud, "that their collective answer is always given as 'I.' What obscure telescoping of egotisms can be the cause of that. . . ."

He dropped the mood of wonder at once. "Tell me," he said, looking deliberately at Leithgow: "Would the brain of Master Scientist Eliot Leithgow be more valuable in the position of the master brain than Cram's?"

A horrible eternity passed. Again came the inhuman voice:

"I have answered that question before. Yes."

DR. KU broke the stunned silence that followed this verdict.

"Don't forget that several ray-guns are centered on you, Carse," he remarked casually. "Others, black, are on you. Earthlings would no doubt consider your emotions very creditable; I only suggest that you keep them under control."

But the Hawk had given no slightest intimation that he might attempt anything. He sat quietly, a little tensely, his face an icy mask, only the freezing shock of his steady gray eyes betraying his emotion as they bore straight into those of the Eurasian. No man could meet such eyes for long, and even the tiger ones of Ku Sui the all-powerful went aside at the icy murder that showed there.

Friday still stood in back of the chairs where were seated his two friends. He was scared to death from the thing he had seen. His face was a sickly, ashy gray, and his eyes large round rolling white marbles; but at the slightest sign of a break he would have metamorphosed into a demon of destruction, however hopeless the try, with ray-guns covering him at all times. Such was his love and loyalty for his famous master.

Eliot Leithgow was a man resigned. His head sank down on his chest. Dr. Ku's next words, though aimed at him, did not seem to penetrate his consciousness.

"You see, Master Leithgow, I have no choice. My purposes are all-important; they always come first; they demand this substitution. Were your intellect of lesser stature, I would have no interest in you whatever. But as it is. . . ." He shrugged.

Hawk Carse stood up.

The Eurasian's voice fell away. The ensuing silence gave an icy, clear-cut sharpness to the whisper that then cut through it from thin lips that barely moved:

"God help you, Ku Sui, if you do it. *God help you.*"

DR. KU SUI smiled deprecatingly and again shrugged.

"I have told you before that God helps those who help themselves. I have always had splendid results from helping myself."

For a moment he looked away as he considered something in his mind. Then to his veiled eyes came the old mocking irony, and he said:

"I think perhaps you'd like to observe the operations, my friend, and I'm going to allow you to. Not here—no. I could never have you interrupting; the series of operations is of infinite delicacy and will require weeks. But I can make other arrangements; I can give you as good as ringside seats for each performance. A small visi-screen might be attached to one wall of your cell to enable you to see every detail of what transpires here." His tone suddenly stiffened. *"I wouldn't, Carse!"*

The Hawk relaxed from the brink on which he had wavered. A sudden mad rush—what else remained? What else? For an instant he had lost his head—one of the several times in his whole life. Just for an instant he had forgotten his phenomenal patience under torture, his own axiom that in every tight place there was a way out.

"That's much safer," said Ku Sui. "Perhaps you and the black had better return to your cell."

Certain little muscles in the Hawk's face were trembling as he turned to go, and his feet would not work well. The ray-guns of the coolie-guards covered his every move. Friday followed just behind.

As the adventurer came to the door he stopped and turned, and his eyes went back to those of the frail, elderly scientist.

The doomed man met the gray eyes and their agony with a smile.

"It's all right, old comrade," he said. "Just remember to destroy this hellish device, if you ever possibly can. My love to Sandra; and to her, and my dear ones on Earth, anything but the truth. . . . Farewell."

Carse's fingernails bit each one into his palms. He hesitated; tried, but could not speak.

"All right, Carse—you may go."

The feelingless guards nudged white man and black out, and the door swung solidly closed behind them. . . .

CHAPTER X

In the Visi-Screen

THERE were those among the few claiming to have any insight into the real Hawk Carse who declared that a month went out of his life for every minute he spent in the cell then. The story, of course, came trickling out through various unreliable sources; we who delve in the lore of the great adventurer have to thank for our authorities Sewell, the great historian of that generation—who personally traveled several million miles to get what meager facts the Hawk would divulge concerning his life and career—equally with Friday, who shared this particular adventure with him. Friday's emotional eyes no doubt colored his memory of the scenes he passed through, and it is likely that the facts lost nothing in the simple dramatic way he would relate them.

But certainly the black was as fearful of his master during that period in the cell as he was of what he saw acted out on the screen.

We can picture him telling of

the ordeal, his big eyes rolling and his deep rich voice trembling with the memories stamped forever in his brain; and picture too the men who, at one time or another, listened to him, fascinated, their mouths agape and a tickling down the length of their spines. It was probably only Friday's genius as a narrator which later caused some of his listeners to swear that new lines were grooved in Carse's face and a few flaxen hairs silvered by the minutes he spent watching Eliot Leithgow strapped down on that operating table, close to the beautiful surgeon fingers of Dr. Ku Sui.

But whether or not that period of torture really pierced through his iron emotional guard and set its mark on him permanently by aging him, it is impossible to say. However, there were deep things in Hawk Carse, and the deepest among them were the ties binding him to his friends; there was also that certain cold vanity; and considering these it is probable that he came very close indeed to the brink of some frightening emotional abyss, before which he had few shreds of mind and body-discipline left. . . .

HE reentered the cell like a ghost; he stood very still, his hands slowly clenching and unclenching behind his back, and his pale face inclined low, so that the chin rested on his chest. So he stood for some minutes, Friday not daring to disturb him, until the single door that gave entrance clicked in its lock and opened again. At this he raised his head. Five men came in, all coolies, three of whom had ray-guns which they kept scrupulously on the white man and black while the other two rigged up an apparatus well up on one of the cell walls. They remained wholly unaffected the several times their dull eyes met those of the Hawk. Perhaps, being mechanicalized humans, practically robots, they got no reaction from the icy gray eyes in his strained white face.

The device they attached was some two square feet of faintly gleaming screen, rimmed by metal and with little behind it other than two small enclosed tubes, a cuplike projector with wires looping several terminals on its exterior, and a length of black, rubberized cable, which last was passed through one of the five-inch ventilating slits high in the wall. Carse regarded it with his hard stare until the door clicked behind the coolies and they were once more alone. Then his head returned to its bowed position, and Friday approached the apparatus and began to examine it with the curiosity of the born mechanic he was.

"Let it be, Friday," the Hawk ordered tonelessly.

A dozen minutes passed in silence.

The silence was outward: there was no quiet in the adventurer's head. He could not stop the sharp remorseless voice which kept sounding in his brain. Its pitiless words flailed him unceasingly with their stinging taunts. "You—you whom they call the Hawk," it would say; "you, the infallible one—you, so recklessly, egotistically confident—you have brought this to pass! Not only have you allowed yourself to be trapped, but Eliot Leithgow! He is out there now; and soon his brain will be condemned forever to that which you have seen! The brain that trusted you! And you have brought this to pass! Yours the blame, the never-failing Hawk! All yours—yours—yours!"

A voice reached him from far away. A soft negro voice which said, timidly:

"They're beginning, suh. Captain

Carse? On the screen, suh; they're beginning."

That was worse. The real ordeal was approaching. True, he might have thrown himself on the coolie-guards who had just left—but his death would not have helped old M. S.

Friday spoke again, and this time his words leaped roaring into Carse's ears. He raised his head and looked.

The tubes behind the screen were crackling, and the screen itself had come to life. He was looking at the laboratory. But the place was changed.

WHAT had before been a wide circular room, with complicated machines and unnamed scientific apparatus following only its walls, so as to leave the center of its floor empty and free from obstructions, was now a place of deep shadow pierced by a broad cone of blinding white light which shafted down from some source overhead and threw into brilliant emphasis only the center of the room.

The light struck straight down upon an operating table. At its head stood a squat metal cylinder sprouting a long flexible tube which ended in a cone—no doubt the anesthetizing apparatus. A stepped-back tier of white metal drawers flanked one side of the table, upon its various upper surfaces an array of gleaming surgeon's tools. In neat squads they lay there: long thin knives with straight and curved cutting edges; handled wires, curved into hooks and eccentric corkscrew shapes; scalpels of different sizes; forceps, clasps, retractors, odd metal claws, circular saw-blades and a variety of other unclassified instruments. Sterilizers were convenient to one side, a thin wraith of steam drifting up from them into the source of the light.

Four men worked within the brilliant shaft of illumination—four white-clad figures, hands gloved and faces swathed in surgeons' masks. Only their lifeless eyes were visible, concentrated on their tasks of preparation. Steam rose in increased mists as one figure lifted back the lid of a sterilizer and dropped in some gleaming instruments. The cloud swirled around his masked face and body with devilish infernolike effect.

All this in deadest silence. From the darkness came another figure, tall and commanding, a shape whose black silk garments struck a new note in the dazzling whiteness of the scene. He was pulling on operating gloves. His slanted eyes showed keen and watchful through the eyeholes of the mask he already wore, as he surveyed the preparations. Ominous Ku Sui looked, among his white-clad assistants.

The Eurasian seemed to give an order, and a white figure turned and glanced off into the surrounding darkness, raising one hand. A door showed in faint outline as it opened. Through the door two shadows moved, wheeling something long and flat between them.

They came into the light, two coolies, and wheeled their conveyance alongside the operating table. Then they turned into the darkness and were gone.

"Oh!" gasped Friday. "They've shaved off his head!"

THE frail form of Eliot Leithgow, clad to the neck in loose white garments, showed clearly as he was lifted to the operating table. As Friday said, his hair was all gone—shaved off close—stunning verification of what was to happen. Awfully alone and helpless he looked, yet his face was calm and he lay there composed, watching his soulless inquisitors with keen blue eyes. But his expression

altered when Dr. Ku appeared over him and felt and prodded his naked head.

"I can't stand this!"

It was a whisper of agony in the silence of the cell where the two men stood watching, a cry from the fiber of the Hawk's innermost self. The path he left across the frontiers of space was primarily a lonely one; but Friday and Eliot Leithgow and two or three others were friends and very precious to him, and they received all the emotion in his tough, hard soul. Especially Leithgow—old, alone, dishonored on Earth, frail and nearing the end of the long years—he needed protection. He had trusted Carse.

Trusted him! And now this!

Ku Sui's fingers were prodding Leithgow's head like that of any dumb animal chosen as subject for experimentation. Prodding. . . . Feeling. . . .

"I can't stand it!" the Hawk whispered again.

The mask on his face, that famous self-imposed mask that hid all emotion, had broken. Lines were there, deep with agony; tiny drops of sweat stood out all over. He saw Ku Sui pick up something and adjust it to his grip while looking down at the man who lay, now strapped, on the table. He saw him nod curtly to an assistant; saw the anesthetic cylinder wheeled up a little closer, and the dials on it set to quivering. . . .

His hands came up and covered his eyes. But only for a moment. He would not be able to keep his sight away. That was the exquisite torture the Eurasian had counted on: he well knew as he had arranged it that the adventurer would not be able to hold his eyes from the screen. Carse had to look!

He took away his hands and raised his eyes.

The screen was blank!

FRIDAY looked up with a grin from where he was kneeling before the knob on the door of the cell. Carse saw that the knob was of metal, centered in an inset square of some dull fibrous composition.

"This door has an electric lock, suh," the negro explained rapidly. "And things worked by electricity can often be short-circuited!"

Quickly and silently he had disconnected from the television projector the wire which led back through the ventilating slit in the wall, and now was holding its end with one hand while with the other he twisted out the screw which held in the knob. "Anyway, won't hurt to try," he said, removing the screw and laying it on the floor. In another second the knob lay beside it, and he was squinting into the hole where it had fitted.

"Be quick!" Carse whispered.

Friday did not answer. He was guessing at the location of the mechanism within, and trying to summon up all the knowledge he had of such things. After a moment he bent one of the live ends of the wire he was holding into a gentle curve and felt his way down within the lock with it, carefully keeping the other end clear of all contacts.

Seconds went by as his fingers delicately worked—seconds that told terribly on Hawk Carse. For the screen was blank and lifeless, and there was no way of knowing how far the work in the laboratory had meanwhile progressed. In his mind remained each detail of the scene as he had viewed it last: the strapped-down figure, the approaching anesthetic cylinder, the knives lying in readiness. . . . How was he to know if one of those instruments were not already tinged with scarlet?

"Oh, be quick!" he cried again.

"If I can touch a live part of the

lock's circuit," grunted Friday, absorbed, "there ought—to—be—trouble."

SUDDENLY currents clashed with a sputtering hiss, and a shower of sparks shot out of the knob-hole and were instantly gone. Short-circuited! It remained to be seen whether it had destroyed the mechanism of the lock. Friday dropped the hot, burned-through wire he was holding and reached for the knob, but the Hawk had leaped into life and was ahead of him.

In a moment the knob was in the door and its holding screw partway in. Gently the Hawk tried the knob. It turned!

But they did not leave the cell—then. Ku Sui's voice was echoing through the room, more than a trace of irritation in its tone:

"Hawk Carse, you are beginning to annoy me—you and your too-clever black satellite."

Carse's eyes flashed to the ceiling. A small disklike object, almost unnoticeable, lay flat against it in one place.

"Yes," continued Ku Sui, "I can talk to you, hear you and see you. I believe you have succeeded in destroying the lock. So open it and glance into the corridor—and escape, if you still want to. I rather wish you'd try, for I'm extremely busy and must not be disturbed again."

Graven-faced, without comment Carse turned the knob and opened the door an inch. He peeped through, Friday doing so also over his head—peeped right into the muzzles of four ray-guns, held by an equal number of coolie-guards waiting there.

"So that's it," Friday said, dejectedly. "He saw me workin' on the lock an' sent those guards here at once. Or else had them there all the time."

THE Hawk closed the door and considered what to do. Ku Sui's voice returned.

"Yes," it sounded metallically, "I've an assistant posted here who's watching every move you make. Don't, therefore, hope to surprise me by anything you may do.

"Now I am going to resume work. Reconnect the screen: I've had the burned-out fuse replaced. If you won't, I'll have it done for you—and have you so bound that you'll be forced to look at it.

"Don't tamper with any of my hearing and seeing mechanisms again, please. If you do, I will be forced to have you destroyed within five minutes.

"But—if you'd like to leave your cell, you have my full permission. You should find it easy, now that the lock is broken."

The voice said no more. Carse ordered Friday harshly:

"Reconnect the screen."

The negro hastened to obey. His master's gray eyes again fastened on the screen. Fiercely, for a moment, he smoothed his bangs.

The laboratory flashed into clear outline again. There was the shaft of white light; the operating table, full under it; the anesthetic cylinder, the banks of instruments, the sterilizers with their wisps of steam curling ceaselessly up. There were the efficient white-clad assistant-surgeons, their dull eyes showing through the holes in their masks. And there was the black figure of Ku Sui, an ironic smile on his lips, and before him the resigned and helpless form of Eliot Leithgow.

The Eurasian gestured. An assistant found the pulse in Leithgow's wrist, and another bent over him in such fashion that the prisoners could not see what he was doing. Ku Sui too bent over, something in his hands. The prelude to living death had begun. . . .

AT that moment Hawk Carse was a different man, recovered from the weakness that had made him cry out at his friend's imminent destruction a short time before. The old characteristic fierceness and recklessness had come back to him; he had decided on action—on probable death. "I've been too cautious!" he exclaimed violently in his thoughts.

"Friday!" he whispered sharply to the negro, going close.

"Yes, suh?"

"Four men outside—a sudden charge through that door when I nod. We'll die, too, by God! Willing?"

Friday was held by the man's iron will to succeed or die. Without hesitation he whispered back:

"Yes, suh!"

Their whispers had been low. Dr. Ku Sui had not been warned, for the screen still showed him bending over his victim.

"You'll open the door; you're nearest. I'll go through first," the Hawk murmured, and smiled at the loyalty behind the promptness of his man's grin of understanding.

Then both smiles faded. The muscles of the negro's huge body bunched in readiness for the signal as tensely he watched the flaxen-haired head close to him.

Suddenly it nodded.

The door swung wide and white man and black went charging out.

And immediately there burst in their ears the furious clanging of a general alarm bell, sounding throughout the whole building!

CHAPTER XI

Trapped in the Laboratory

IN his carefully welded plot-chain, Ku Sui left one weak link, though he was not aware of it at the time. For it would not appear save by the testing of it, and he had not expected it to be tested. Carse acted recklessly; perhaps, if cold reason be applied to his move, senselessly. Dr. Ku had not thought he would dare make the break he did. But the adventurer did dare, and the loophole, the weak link, was exposed.

The Eurasian had a paranoic's vanity, and with it a lust accumulated over years to exact the most terrible vengeance he could from the adventurer who had frustrated his schemes time and time again. His arrangement for subtly forcing Carse to watch the operation was part of his vengeance; but he planned more. He wanted his old foe, broken by the living death of Eliot Leithgow, to die slowly later; wanted to crumple that will of steel utterly; wanted to watch and pleasantly mock him during the slow death agonies he had contrived for him. Therefore—and here lay the weak link— Dr. Ku left orders for Carse to be kept alive.

If he had not instructed his coolie-guards to wound, and not kill, in case of a break for freedom, Carse and Friday could never possibly have gained the corridor alive. The four waiting ray-guns would have burned out their lives within three seconds. But, as it was, the barrage of shots from the ray-guns was directed at their legs, with the intention of bringing them down—and their legs were moving very rapidly. And so, reckoning up the caliber of the two comrades, their wild fighting start, their fatalistic resolve to get as many as possible of the enemy before they died, the result of that first hectic scramble in the corridor was more or less inevitable.

WITH a savage war-whoop that rose, ear-shattering, above the clanging of the alarm bell, Friday flung his two hundred and twenty pounds of brawn and muscle after Carse into the thick

of the guards, taking no more notice of the spitting streaks of orange light that laced past his legs than if they had been squirts from a water-pistol. The guards had been bunched well together, but they scattered like ten-pins when Carse, followed by the living thunderbolt of fighting negro, crashed into them. In that first charge three of them were knocked flat, their guns either dropping or twisting loose from their hands.

Immediately recovering, the Hawk darted at the fourth with the speed of a striking cobra; his wiry hands closed around the yellow throat; and two seconds later that coolie was no longer connected with the proceedings, a whacking head-thump being his passport into insensibility. Again Friday's exultant war-whoop bellowed out over the scene.

Carse pushed to his feet, his deadly fighting smile on his face, a ray-gun in his hand. He stooped and picked up another.

"Get to the Master!" roared Friday, an ebon god of war between two futilely attacking bodies. "I'm —followin'!"

In those red seconds, ultimate success was still too impossible a thing to even hope for. But they would at least try, then die like the men they were.

Hawk Carse sped on down the corridor, a deadly, smoothly-functioning fighting machine. And after him a few seconds later came leaping the negro, a whooping giant with a ray-gun in each hand and the light of battle flashing in his eyes. As his personal contribution to the fight he was leaving in the rear three sprawled bodies, two knocked cold and the third with a broken neck.

Their triumph had so far been a matter of but sixty seconds. The jangle of the alarm bell continued ominously. It summoned resistance, well-trained resistance; the defenses of the asteroid awoke to action. Doors spacing the corridor behind now began to open, releasing dozens of Orientals. Nor had these men heard Ku Sui's orders. They would shoot to kill!

THREE peering faces suddenly were in Hawk Carse's line of vision ahead; three ray-guns were settling on him. His famous left hand, the gun-hand that was known and dreaded throughout space, moved with the eye-blinding speed that was necessary; his trigger finger bent only three times, but each of the pencil-thin streaks of orange that spat forth brought down a man, and he had struck without slackening his stride for an instant.

Twice more his ray-gun spoke, and then the goal, the entrance to the central laboratory, was just ahead. Carse glanced back.

"Yes, suh!" a fierce voice yelled out to him. "Coming!"

Friday was bringing up the rear as fast as he could. He came sideways in a zigzag course ducking and whirling constantly, and in between firing promptly at any portions of enemy anatomies that dared project into the line of the corridor. The Hawk covered the last few yards of his retreat, and then they were together at the laboratory.

"The knob!" Carse ordered, spraying the corridor in general warning.

Friday tried it, but the door was locked. He hurled himself against it, but it did not budge.

How get through? On the other side of the door was Leithgow, and probably Ku Sui; on this side they were trapped in a blind end. They could never make back down that gauntlet and live, and anything like concerted action on the part of the yellows would do for them where they were.

That concerted action came at once. Seventy feet behind, a heavy shot-projector was pushed out on its little rollers from one of the doors. A hand reached out and whirled it so that its muzzle bore straight down the corridor at them. Carse shot at the hand, but the target was too small even for his fine eye, and he missed; Friday silenced an emboldened orange spot of light that was spitting streaks at them.

Hopeless! It looked like the end. Hawk Carse's face was in its old, emotionless mold as he waited, his gun sharp on the spot where the hand must reappear if they would fire the deadly projector. He had to get that hand—and any others that took its place. An almost impossible shot. He couldn't rush it and get it too. Not in time.

A moment passed. The hand flashed out; Carse shot and again missed. Then a narrow cone was along the corridor, a blinding orange streak. Instantly, with a rasp of thunder, it was gone, and the air was stifling.

The Hawk was untouched; Friday, too, he saw. The bolt had been taken by the door—and one of the door's two halves was ajar!

AT once Hawk Carse acted. "Inside!" he yelled, then was through, the negro right behind. Carse's eyes swept the laboratory. It was a place of shadows, the sole light being a faint gleam from a tiny bulb-tipped surgical tool which glimmered weirdly from the bank of instruments waiting by the operating table. Carse saw no one.

"Hold the door!" he ordered. "I don't think it'll lock!"

Friday obeyed. He found the inner bolt melted and the lock inoperative; and, placing his forearms on either side of the middle crack of the door, he stood bracing it.

A furious pounding shook the door. A heavy pressure bent it inward.

"Quick!" the big black gasped. "Somethin' to wedge it!"

"A minute, Friday," the Hawk answered. "Hold it!"

He was already dragging a metal table there; and, upended under the knob, making an angle with the floor, it held stoutly closed the door, now thumping and quivering with blows given it from outside. The panting negro fell back from the door exhausted, but rose to help his master at the need for placing additional barricades.

That finished, the Hawk wheeled, and at once, pantherlike, ray-guns at the ready, stalked the room. There was no sign of the enemy. He approached the operating table.

A great relief flooded his grim face as he sighted Eliot Leithgow lying there, apparently untouched and still conscious. The elderly scientist was strapped down tight, but he was smiling.

"I knew you'd come, Carse, if you could," he said simply.

There was no time for visiting. "Where's Ku Sui?" the adventurer asked.

"Gone," Leithgow answered. "I heard a door open and close—which one I couldn't see. He went as soon as that bell began to ring. The assistants, too."

Through the shouts and batterings at the barricaded door came a new sound—from another direction. Like a streak the Hawk was at one of the three other doors, throwing its inside hand bolt; and by the time he had shot over the second, Friday had taken the cue and secured the remaining one.

The negro let out a vast breath. "Umph!' he said. "I'll tell the universe that was close!"

HAWK CARSE said nothing. With eyes ever-watchful for sign of a trick or a trap in the ap-

parently deserted laboratory, he quickly unbuckled the bands that held Leithgow to the operating table. Friday lifted the scientist to the floor, where he stretched weakly.

The adventurer smiled faintly, then his eyes went cold and serious. Crisply he said:

"We came, yes—but now I think we're trapped. There'll be men outside each of these four doors. The bolts may hold them a while, but eventually they'll get through. We must look for further weapons. If only there were better light! Friday," he ordered, "look for a switch. *Ah!*"

With a thud and a booming reverberation a systematic battering had begun on the metal door through which they had entered. It quivered visibly and rang as the powerful blows from the other side bludgeoned into it, and evenly spaced, shrewdly delivered at the vital middle point. *Whrang, whrang*—even strokes, ringing throughout the barred laboratory—*whrang . . . whrang. . . .*

And then a similar piece settled into clanging routine on another door; then on the remaining two. The bolts holding them jumped with each deafening thud. Friday scowled, forgot to search farther for the switch, took a few short, indecisive steps, and then stood still again, looking questioningly at his master. The Hawk stood silent also, smoothing the bangs of flaxen hair above one temple, his face knit in concentration.

He had been afraid they would use the great projector on the door, and had been somewhat cheered by the reflection that they dared not, for fear of destroying the contents of the laboratory, especially the irreplaceable brains. But this was worse. Ku Sui was without question directing their efforts now. And that being the case, he could expect to see one door after another battered down—and then a concerted, four-point rush which would end everything. . . .

ELIOT LEITHGOW said the extraordinary thing that pointed a way out. "May I suggest," he said mildly, "that we try to get Dr. Ku Sui's brains to help us?"

"What do you mean?"

The older man smiled, a little sadly. "Those brains—they once were friends of mine. It's possible they'll answer our questions. It won't hurt to try. We'll ask them how it might be possible to get out."

Hawk Carse cried: "Eliot, you've got it! There is a chance!"

But the negro shivered. The brains stood for magic, for ghosts—for awful, unknown things he wanted nothing to do with.

Carse shoved back the screen concealing the infamous device.

"We know where this switch is, at least. If only the current's not been turned off!"

"Probably not," the Master Scientist said, out of his own technical thought-train.

Friday hung back, loath to be concerned. He looked askance at the thing, his open mouth a small round circle.

The Hawk was at the switch, but his hand hesitated. In spite of the emergency at the doors, in spite of his innate promptness of action, he hesitated. This thing he was about to do—this awful human mechanism before him—they were so weird and unnatural. . . .

Then he heard a faint click inside the laboratory—in a place where no one should be. Instinctively he whirled and crouched—and an orange ray streaked over his head with its wicked spit of death. At once his own ray-gun was up and answering to the spot

where the other bolt had started, and then he was flat on the floor and eeling toward the wall opposite.

A HIGH wide panel in the wall had slid open, with only the faint noise Carse had heard to mark its movement. For just a few seconds it stayed open. The Hawk covered the last few feet in a desperate rush, but he reached it too late. It clicked shut in his face, and there was no hold for his hands when he tried to force it back.

Only a voice showed that someone was on the other side. In familiar, suave tones it said:

"Carse, I still will take you and Leithgow—alive. It would of course be idle to ask you to surrender, but that's not necessary, for you're trapped and can't possibly last another five minutes. I intrude only to warn you away from my synchronized brains. I will destroy without compunction anyone who meddles with them."

Dr. Kui's voice dropped away; the last words seemed to have come from below. Apparently he was descending by a stairway or hidden elevator.

"Without compunction!" Leithgow echoed with a bitter smile.

Carse ordered Friday curtly to watch the panel, then returned to Leithgow.

"Eliot," he said, "we've got to be quick."

And with his words the delicate, overstrained filament in the tiny instrument bulb gave out, and the laboratory was plunged into ultimate blackness. . . .

CHAPTER XII

Out Under the Dome

WITHIN the well of darkness rang the metallic reverberations from the battering on the four doors all around. The fluid nothingness was a place of fear. Its nerve-shattering, mind-confusing bedlam might have come from the fantastic anvils of some giant, malevolent blacksmith.

The Hawk's curt voice cut through imperatively:

"Keep your heads. We'll have a light in a second. Light of a sort."

He threw the switch by the side of the chamber of brains.

Seconds passed, and where was darkness grew a faint glow. The switch had operated; the current, probably from the device's own batteries, was there! Quickly and steadily the liquid within the case took on its self-originating glow, until the midnight laboratory was faintly washed with the delicate rosy light. The wires emerged in their complexity as before, and then the brains, all gruesome and naked in their cradles of unnatural life.

Around the internally-lit case were the three besieged Earthlings, half in blackness, the light from the front making ghastly shadows on their faces. Acolites at some sorcerer's rite they looked, with the long inky patches that left them to dissolve formlessly against the far walls of the room.

Grotesque in the operating garments he wore, his bald head shining in the eery light, Eliot Leithgow approached the microphone Dr. Ku had used to communicate with his pathetic subjects. He looked down at the brains, at the wires which threaded the pans they lay in, at the narrow gray tubes that pulsed with blood—or whatever might be the fluid used in its stead. All mechanical was the apparatus—all of metal and other cunningly fashioned man-made materials—all but the brains. . . .

TO the old Master Scientist there came a vision of five human figures, rising specterlike

from the case they were entombed in; straight, proud young figures, two of them; two others old, like himself, and the fifth a gnarled hunchback. Very different were they, each from each other, but each face had its mark of genius; and each face, to Eliot Leithgow, was warm and smiling, for these five men were friends. . . .

So he saw them in vision. . . .

"Another switch has to be thrown to talk with them, Carse," he said. The Hawk indicated one inquiringly. Leithgow nodded. "Yes. That was it." The switch went over.

He steadied himself and said into the speaking grille:

"I am Eliot Leithgow—Master Scientist Eliot Leithgow. Once you knew me. Professors Geinst, Estapp and Norman, Dr. Swanson and Master Scientist Cram—do you remember me? Do you remember how once we worked together; how, long ago on our Earth, we were friends? Do you remember your old colleague, Leithgow?"

He stopped, deeply shaken. In seconds his mind sped back through the years to those five men as he had last seen them—and to two women he had met, calm-faced as their husband-scientists. . . . God forbid those women should ever learn of this!

Carse watched his old comrade closely, fearful of the strain this was on him.

Then came a cold, thin, mechanical voice.

"Yes, Master Scientist Eliot Leithgow. I remember you well."

The scientist strove to keep level his voice as he continued:

"Two friends and I are trapped here. Dr. Ku Sui desires my brain. He wishes to add it to—" He stammered, halted; then burst out: "If it would help you in any way, I'd give it gladly! But it couldn't, I know; it would only aid his power-mad schemes. So my friends and I must escape. And we can see now no way!

"You can hear that noise? It's very loud; men are outside each door, battering at them, and soon they must break through. How can we escape? Do you know of a way, out of your knowledge of conditions here? Will you tell me, old colleagues?"

He waited.

FIFTY feet away from this scene, and missing almost all of it, was Friday. From his post at the panel he kept throwing fearful looks at the nearest door, which was shuddering and clanging and threatening any moment to be wrenched off its hinges. A good thing—he was thinking—that the doors were of stout metal. When one did go he would get five or six of the soulless devils before they brought him down.

Carse waited tensely for the response—if one there was to be. His ears were throbbing in unison with the regular crash of rams on metal, but his eyes never left the convoluted mounds of intelligent matter so fantastically featured by the internal radiance of the life-giving liquid. Impossible, it seemed, that thoughts were stirring inside those gruesome things. . . .

"Please hurry!" he said in a low voice; and Leithgow repeated desperately:

"How can we escape? Please be quick!"

Then the miracle of mechanism and matter functioned and again gave forth the cold voice of the living dead.

"It is my disposition to help you, Eliot Leithgow. On a shelf under one of the tables in this room you will find a portable heat-ray. Melt a hole in the ceiling and go out through the roof."

"Then what can we do?"

"In lockers behind the table there

are space-suits, hanging ready for emergencies. Don them and leave through one of the asteroid's port-locks."

"Ask if the ports are sealed," Carse interjected instantly.

Leithgow asked the question.

"Yes," replied the unhuman voice. *"But twice four to the right will open any of them."*

THE Master Scientist wiped his brow. Though trembling under the strain of conversing with this machine on which his life depended, he did not overlook a single point.

"But the asteroid's gravital pull would hold us close to it," he said. "Is there a way of breaking free from it?"

"You'll find the space-suits are equipped with small generators and gravity-plates which I helped Ku Sui develop. The switch and main control are in the left-hand glove."

"Thank you! Oh, thank you! You give us a chance!" exclaimed old Leithgow.

He turned and looked for the Hawk, and found him already in the lockers and pulling out three space-suits. The clumsy, heavy cone of a portable heat-ray lay on the table ready to hand.

They had little time to waste. The torrid temperature of a new smell of burned metal around the door they had just entered told them as well as words that the large projector in the corridor was at last being used to bore a way in.

With surprising strength in one so slender, Carse lifted the ray and pointed it at an angle toward the middle of the ceiling. He pressed the control button, and a blinding stream of violet radiance splashed against the metal above. It hissed and sputtered where it touched; molten drops fell sizzling and splattering to the floor; then suddenly there was a flood of ruddy illumination, and the Hawk dropped the heat-ray, stepped forward and looked up.

UP through a neatly melted round hole, up at the great glasslike dome which arched over the whole settlement—up, past it, into the vast face of Jupiter, hanging out there oppressively near!

Friday, champing for action, left his post by the panel and dragged a long low cabinet to position under the hole. On top of it he placed the operating table, and, after he had tripped the table's small wheels, another table on top of that.

"You first, Eclipse!" his master rapped out as he finished. "I'll pass the suits to you; then swing Leithgow up."

The negro answered by acting. Swiftly he climbed the rude pile, and reached for the edge of the hole. It was still searingly hot, and he gasped with hurt as his palms and fingers clenched over it, but he did not let go. Levering himself rapidly up, he got a leg through and then his body. A second later he peered back in and lowered his hands down.

"No one up here yet!" he reported. "All right for the suits!"

Carse passed the three bulky suits to him, and also two extra ray-guns he had found in the locker.

"Now, Eliot—up!"

With the Hawk's help, Leithgow clambered onto the cabinet. He was just mounting the operating table when, from behind, came a thin, metallic voice:

"Master Leithgow—Eliot Leithgow—please, a favor?"

LEITHGOW turned and stared, then understood. It was the coordinated brains. They had forgotten to return the switches. And now the cold voice was speaking of its own accord; and somehow—though it might have been imagina-

tion entirely—there seemed to be a tinge of loneliness to the words that sounded from its speaker.

Instantly Leithgow got down and hurried over to the grille. Seconds were precious, but Carse and he were heavily obligated to the brains, and any request in reason had to be fulfilled.

"Yes, What can I possibly do?"

The lower hinge of one side of the barricaded door gave, burned out, and the door wrenched inward at a resumption of the battering. The other hinge still held, but it was bending with each mighty blow. Outwardly calm, Hawk Carse watched the weakening door, a gun in each hand.

"This," said the toneless voice: *"Destroy me. Leave no slightest trace. I live in hell, and have no way to move. . . . There are old memories . . . things that once were dear . . . Earth . . . my homes . . . my lives there. . . . Eliot Leithgow, destroy me. But promise, on your honor as a Master Scientist, never to let a single word regarding my fate reach those on Earth who knew me, loved me. . . ."*

Leithgow looked at the Hawk. The adventurer nodded.

"I'll use the heat-ray," he said, with pity.

He ran and picked it up. But he had taken only one step in return when the second hinge of the yielding door wrenched free. An ear-piercing screech rent the bedlam—and the door fell, half twisting, to lie in the doorway.

As if by a signal the crashing at the other doors stopped. In an extraordinary silence a mob of gray-smocked bodies pressed forward.

Orange streaks laced the dim laboratory. The Hawk shouted, "Up, Eliot! For God's sake, up!" as, with deadly effect, he poured his two ray-guns at the advancing men.

For a second, shaken by the terrible barrage, they fell back, leaving several sprawled bodies on the floor; but they came right back again.

Leithgow got safely to the top of the pile and was snatched out to temporary safety. Frantically Friday called down to his master; he seemed on the point of jumping down into the fight himself. But Hawk Carse had been party to a promise.

He was behind the structure of furniture under the hole he had made in the ceiling. With one gun he spat death at the coolies, while the other he emptied at the case of brains. Two stabbing streams of orange angled from him, one telling with awful effect on the men only two score feet away, and the other absolutely useless. All over the still-glowing case it spat its hits, but the glasslike substance resisted it completely, and remained unscathed.

Carse swore harshly. He hurled one empty gun at the case, turned with a last salvo of shots at the coolies, and then was up on the pile and leaping for Friday's hands.

They caught and gripped his, swung him once—twice—and hauled him swiftly out. But as the Hawk disappeared he shouted down the case:

"I'll be back!"

CHAPTER XIII

The Final Mystery

ON the roof, Carse quickly scanned their situation. They were standing on the hub of the four-winged building. Far to the left was one set of the dome's great and small port-locks; exactly opposite was the other. Near the left hand ports, a little "north," lay the *Scorpion*. The whole area enclosed was a flat plain of gray soil.

Looming over the great transparent dome hung the flaming disk of Jupiter, so oppressively near that

it seemed about to crash onto the asteroid. Its rays poured in a ruddy flood over the settlement, clearly illuminating each detail; and comparatively close against the face of the mighty planet they could see the whitish globe of Satellite III. It offered the nearest haven. They might arrive famished, but in the power-equipped space-suits which Friday was lugging they should be able to span the gap.

The Hawk nodded to the port-locks on the left.

"That one," he snapped. "We'll have two chances, the *Scorpion* and the port, but the port's safest; we could never get the whole ship underway and through the lock in time. To prevent pursuit, all we have to do is leave the lock open after us."

They hastened along the roof of the wing that ran that way. As yet there was no outside pursuit; most of the settlement's guards seemed to have been concentrated in the attack on the laboratory. But Carse knew it would only be a matter of seconds before coolies would emerge from half a dozen different points. He was trying to figure out which points they were likely to be when there passed, perilously close, the spit of an orange ray. He glanced back, to see the first of the crowd which had broken into the laboratory come clambering up through the roof. Then, as a second shot sizzled by, they arrived at the end of the wing.

FRIDAY took the fifteen-foot drop without hesitation. Carse lowered Leithgow to him and then swung down himself. They panted forward again, over grayish, glittering soil.

Some three hundred yards of open space lay between them and the port-locks. Friday now led the way, weighted down under the heavy suits; the scientist came next and then the Hawk, his sole remaining gun replying at intervals to the ever-thickening barrage from behind. They had covered perhaps a half of that distance when the negro's steps suddenly faltered and he halted.

"Look there!" he groaned. "Cuttin' us off! We'll never make it, suh!"

Carse looked where he pointed, and saw a squad of half a dozen men emerging from a building well to their left. They were running at full speed for the lock, and, as Friday had said, it was obvious that they would get there first. He glanced quickly around. Pursuit from the laboratory in the rear was hot—and moreover three coolies were angling sharply out on each side, to outflank them! In a minute they would be surrounded! Unable to reach either the port or the ship!

And then came the crowning piece of ill-luck. Suddenly the Hawk winced; staggered; clapped a hand to his shoulder. A lucky shot from an enemy gun had caught him.

"You're hit!" cried Leithgow.

"It's nothing. . . ."

THE slender adventurer stood very still, thinking. He was trapped. But he was never more dangerous than when he was trapped.

Leithgow timidly ventured a suggestion.

"Why can't we put on our space-suits and rise up in the dome?"

Crisply the answer came back:

"Hard to maneuver laterally. Never get out ports. Sure death. . . . *I have it!*" he ended.

Tersely he gave the two men orders:

"We've a bare chance—if I'm lucky. Now listen, and obey me exactly. Put on your space-suits. Shut them tight. Lie flat. You, Friday, use your ray-guns *and keep*

the guards from coming close. Wait here. Do absolutely nothing save keep them off. And keep your suits intact or you're dead!"

He grabbed one of the suits from Friday and crept toward the *Scorpion* on hands and knees. The three coolies from the pursuit at the rear had already cut him off from the ship. Friday could not control his alarm at this apparently crazy act. He called after:

"But you can't get to the ship through those guards! And if you did, you couldn't run it yourself—and pick us up!"

Carse turned, his face white with cold passion. "When will you learn to obey me implicitly?" he said harshly—and crept on.

Old Leithgow trusted his friend a little more. "Get your suit on, Friday," he said gently, and slipped into his own. The negro, ashamed, followed his example; then both were flat on the ground, back to back, sniping—Leithgow also—as best they could under such conditions at the groups of men who now were bellying ever nearer from three directions.

The Hawk's plan might well have appeared hair-brained to one who did not know the man, and what he was capable of accomplishing under pressure. The very first step in this plan required the destroying of the three outflanking guards between him and the space-ship.

AS so often in the great adventurer's career, he was lucky. The unthinking have always admitted his luck, but never seen that he forced it—forced it by doing the unexpected—attacking when he was attacked. He was doing that now. The three coolie-guards in his way must have known who he was, so their alarm at finding themselves, the attackers, attacked, will account for their making a move of poor strategy. Instead of scattering and defending the open entrance-port of the space-ship from a short distance, they in their alarm made haste to get inside to defend it from there. The interior was the best place to defend the ship—if they had already been inside—for they could lie in the inner darkness and sweep the open port when the Hawk entered.

But to try to pass through the port—that was bad judgment. It was only necessary for Carse to hold bead on it and fire when they passed in line.

This was the present "luck" of the adventurer. He might have sniped the guards anyway, but he had it easier. From fifty yards away, prone and carefully sighting, he took the three lives that had been so viciously, so subversively altered by Ku Sui.

A moment later, the way cleared, he was inside the ship—and his space-suit lay on the ground outside.

RAPIDLY the three groups of guards closed in on Leithgow and Friday. The two men made their advance as uncomfortable as possible, but they could do no accurate shooting at such difficult targets as crawling men, from within the cramped interiors of their cumbrous suits. Not even Friday, who was a crack shot. They could not hold out long—nor did they expect to.

They had been too occupied to notice what had become of Carse. Within their suits all was silence; they heard neither their friend's shots as he struck down the three coolies nor their own. Quick glances at the ship's open port revealed no one; nothing. Probably, they thought, the Hawk was dead. Even if he were not, they would soon be. A matter of a minute. Maybe two. Their suits were still intact, but they could not remain so much

longer. Ku Sui had this time ordered them destroyed.

And now half a dozen coolies were leaving the ring tightening around them and creeping to the *Scorpion* as additional guards. . . .

It was then, in those last few seconds, with death staring them in the face, that Friday did a magnificent thing. It happened that Carse saw him do it as the adventurer jumped out of the *Scorpion* again and with frantic speed slipped into the space-suit he had left waiting. Friday stood straight up, a hundred feet from the enemy—a great bloated monster in his padded suit—and charged. Leithgow and the Hawk heard, by their suit helmet-radios, his battle yell of defiance, but the coolies did not. All silent, apparently, he rushed them—slowly, because of his hampering suit—his ray-gun spitting orange contempt—and other pencils of fiery death passing him narrowly by.

And then, while he still charged, the rays stopped stabbing past him, and he saw the faces of the coolie-guards turn upward. So surprised was the expression on their faces that he turned and looked too—and saw the *Scorpion,* her entrance ports still open, forty feet off the ground and rising with swift acceleration.

Faster and faster she rose; all ray-guns were silenced before her astounding ascent. Higher and higher—faster and faster—till with a stunning, ear-deafening crash she struck the great dome and was through.

Then came chaos.

A huge, jagged gash marked the ship's passage, and through this the air inside the dome poured with cyclonic force, snatching into its maelstrom everything unfastened within the dome and hurling it crazily into space. For seconds the flood rushed out, a visible thing, gray from the soil which it scooped up; and while its fury lasted every building on the asteroid quivered and groaned from the terrific strain.

And where, a moment before, men had stood—two white men and a black, and a score of coolie-guards—there was now nothing save the flat rock under the gaping hole. The upper soil had been ripped out and flung forth like a concealing veil around the bodies that had gone with it. . . .

FOR an interval Hawk Carse knew nothing. He had ceased to live, it seemed, and was soaring through Eternity. He never knew how much time passed before his numbed senses began to return and he became aware of weight and of a furious roaring in his head.

He was moving forward at blinding speed. Something kept flashing before him—a wide stream of ruddy orange light; his dazed brain could connect it with nothing he had ever known. Soon the orange stream settled into spasmodic bursts, pitch blackness filling the intervals; and when it came more slowly he saw that it was in reality the vast flaming ball of Jupiter, streaking across the line of vision as he tumbled over and over, head over heels—free in space!

The realization helped his return to alertness. As the wild tumbling motion gradually ceased, and Jupiter tended to stay more and more under his feet, he peered around through his face-plate. To one side he glimpsed two grotesque, bulky figures, one half of them limned glaringly against the blackness of space by the near-by planet's light. He saw other figures, too, spread out in a scattered fringe—figures of men in smocks, dead and bloated and white.

They were the coolies, these last, and the other two were of course Leithgow and Friday. But had they survived the outrush of air? Carse

felt in his left glove for the suit's gravity control lever; found it and tentatively moved it. His acceleration slowly increased. He brought the lever part-way back. Then, into the microphone encased inside the helmet, he called:

"Leithgow! Leithgow! Can you hear me? Friday!"

The radio broadcast his words. Soon welcome answers came in Eliot Leithgow's tired voice and the negro's emphatic bass.

"Maneuver together," Carse instructed them. "We must lock arms and stay close."

SLOWLY, clumsily, the three monstrous figures made toward each other, and presently they were reunited in a close group. Carse pointed an arm into the face of Jupiter where there hung poised a gleaming globe of white, dappled with dark splotches.

"Satellite III," he said, "—our goal. And we'll get there without interruption now that Ku Sui, his laboratory, his coordinated brains, are destroyed. . . . You are very quiet, Eliot. Aren't you happy at our success?"

"I am very tired," the old scientist said. "Oh, but we'll sleep and feast and gam when we get back to my hidden lab on Three—won't we!"

"Chicken for me!" exclaimed Friday. "Even at twenty dollars a can!"

"Your shoulder, Carse—how is it?" asked the Master Scientist solicitously. "And how did you ever get out of that space-ship in time, after you had given it such an acceleration?"

There was a tired smile in the adventurer's voice when he replied:

"My shoulder—a trifle. I have a dozen such burns. But my feet still hurt from the twenty-foot drop I took out of the *Scorpion*. I had to get out: the shock of the crash would have killed me.

"But I've been looking for the asteroid," he went on—and interrupted himself. "By the horn of the phanti!" he exclaimed in amazement. "Look, Eliot! That explains it all!"

His whole body was tilted back to allow him to look upward. Friday and the Master Scientist followed his startled gaze, and they too gaped in wonder.

For there was nothing above or around them—no dwindling fragment of rock—no sign of any asteroid: only the eternal stars.

"Yes," said Eliot Leithgow slowly, "that explains it all. . . ."

"It explains what?" asked Friday, staring. "And where is the asteroid?"

"It's up there," the Hawk replied. "Don't you see now, Eclipse, why no one's ever found it; why we could hunt forever for it and hunt in vain? Ku Sui made his whole asteroid invisible!"

ASTOUNDING STORIES

Appears on Newsstands

THE FIRST THURSDAY IN EACH MONTH

He could see, above them, the belly of a white ship.

The Hammer of Thor

By Charles Willard Diffin

Like the Hammer of Thor was the clash of Danny O'Rourke with the mysterious giant of space.

THE Director General of District Three, Ural Division of the Russian States, was a fool. Danny O'Rourke had reached that conclusion some time before—a conclusion, however, that he was most careful to keep unexpressed.

And then Danny not only

thought it; he *knew* the Director was a fool; and the amazing incident that proved it took place in Stobolsk, the Governmental Headquarters of District Three. Although Danny's regular station was on a lonely peak in the Sierra Nevada Mountains in the United States, the occurrence was nevertheless observed by him; and this happened for two reasons.

The New Soviet Government that took over control of all the Russias in 1943 wanted, among other things, to install the most modern fire-fighting system, the equal of anything in the world. They turned, quite naturally, to the United States of America for their instruction; and this was reason number one why Danny O'Rourke, pilot of the Air Fire Force, was where he was on the morning of June 13th.

The second reason was the tremendous timber wealth in the Ural Division and the threat to destroy it by fire.

Perhaps there might be mentioned a third reason: that this same Danny O'Rourke, red-haired, smiling, and debonair was listed on the Air Fire Force of the United States with the highest rating that the A. F. F. has to give its pilots. But Danny would have grinned at such a suggestion and would have countered with a denial that he was better qualified than "the rest of the boys."

But Danny was there; he had been talking at length with the Director General on the technical differences of the hot and cold nitrogen blasts for controlling fires on a wide front when suddenly the big man was brought in.

THE great figure stooped almost double to enter the room, and Danny ran a hand through his shock of red hair and stared open-mouthed at the giant when he straightened again and towered above the guard of Red soldiers who had brought him into the high-ceiled room.

He was clothed in a single garment of glinting blue that wrapped him about and fell in heavy folds to the floor. Danny felt the resemblance to the shimmering blue of steel that has passed through fire, and his eyes held to that garment in fascination until his gaze went on and up to the face.

The man's face was red, as if the flesh had been burned; here was one man Danny could not classify. He had met the people of many lands but never had he seen one like this.

In one quick staring glance, Danny caught a picture of heavy jaws —a flashing of yellow teeth when the mouth opened to emit guttural, unrecognizable words—nostrils that ran crosswise of the face in a nose broad and flat! The forehead above was low and sloping. From the straggling yellow hair it slanted down to brows that overhung deep-sunk and cavernous eyes. . . . And when Danny O'Rourke's own curious eyes met those of the stranger, they were held in a grip that was almost hypnotic.

"Like a dirty, crawlin' snake's!" he was telling himself over and over. "Heaven help us if that boy ever gets rough. Who he is or what he is, I don't know, but if I was the Director, I'd treat him nice till I found out."

Danny and the Director were standing side by side. The giant figure fixed a cold stare on Danny and barked short sentences that seemed to the listener to be an explanation.

But Danny motioned helplessly to the official at his side. "Maybe you can savvy that," he suggested; "it's new talk to me."

The newcomer repeated the guttural sounds. Upon the Director's

face was a frown of suspicion and puzzled wonder; the Director General did not like to encounter either happenings or persons he could not readily understand; it was disturbing to one's official dignity. The giant must have read some of this, for he tried to make himself clear.

HE repeated the sentences slowly. Then he waved one huge hand in air and pointed upward, and the hand moved up and up as if to indicate some tremendous distance. He pointed to himself; then brought one aiming finger down as if he were coming from that far-off place. And Danny got the significance.

"It's happened!" he told the Director explosively. "I knew it would come some day—I knew they'd get here! And us monkeyin' with our stratosphere ships and thinkin' we were beatin' the rest of the Universe!"

The Director regarded the young American with about the same degree of disfavor as he had shown the giant. "What is it you say?" he questioned. "You mean—what? I do not understand."

And, in careful words, Danny explained. He told the Director of District Three something of his dreams that space might not be an insurmountable bar; he told him, with enthusiasm driving his words out faster and faster, that here was a man—or if not a man, a living creature of some sort—that had come out of space.

"Where did they find him?" he demanded. "Where is his ship?"

But he ceased to ask questions as he noticed the Director's mirth. For that official was rocking with roaring laughter that had a distinctly uncomplimentary sound. And he added some words in Russian that were as incomprehensible to Danny as the growling talk of the giant man, but the O'Rourke temper flamed as he saw the other Russians in the room smiling appreciatively.

Then: "Take him away!" the Director thundered. "We'll see where he comes from. Search him! And if he hasn't any passports—" The unended sentence was suggestive.

BUT an hour later, Danny saw the giant furnish his own ending to the incompleted order. He had left the Director's room. Across the street was the gray stone building where prisoners were held for disposition by the courts. And once more Danny O'Rourke's jaw dropped in open-mouthed, unbelieving amazement as he saw a section of gray stone wall fall outward where the edge of it was sharply outlined in white-hot, dripping stone.

A great figure stepped forth. In his hand was a rod like an elongated pencil attached to a heavy butt. And though nothing visible came from the rod, Danny saw it pointed back at the building where iron bars softened till they sent rivulets of molten steel splashing upon the pavement.

A squad of soldiers in the blood-red color of their service stood nearby. One gave an order, and a dozen rifles were swung toward their shoulders. But the rifles never came to rest.

Danny saw the quick swing of the slender rod. And he saw the men's mouths opened in screams that were never uttered. For, quicker than nerves could send their message to human brain and muscles, some unseen force had slashed their bodies in two as if a fiery sword had been swung by invisible hands.

The pointing rod lingered upon the huddled bodies for an instant, while that which had been human flesh vanished in a bursting cloud of smoke; while the stones beneath

turned to a seething pool of molten rock. . . . Then the rod moved slowly toward the frozen figure of Danny O'Rourke.

Did the strange being sense that Danny had not been disbelieving like the rest? Danny could never know. He knew only that he stood rigid with horror, entirely unable to move, while that rod swung upon him; he knew that the hand that held it released something that clicked, wherefore his life had been spared; and he knew that the savage face above wrinkled into something resembling a snarling, triumphant smile, as the rod was returned to its hiding place under the garment of shimmering blue, and the mysterious figure turned and strode savagely down the Avenue Stalin in the city of Stobolsk.

Danny O'Rourke was to carry that picture clearly in his mind—the figure that moved unhurriedly on, towering above the others, men and women, who scurried fearfully from his path. But he was to retain yet more vividly the recollection of a group of red-clad bodies that were severed at their waists as a slim tube swung—then a bursting cloud of oily smoke, and a pool of molten rock where they had been.

SOMETHING of this, perhaps, was clouding the eyes of Danny O'Rourke, Pilot of the A. F. F., a month and more later, as he sat at lookout duty in a gleaming white tower on a high peak of the Sierras. Not that the job of lookout was part of O'Rourke's duty, now that he was back in the U. S. A., but a cylinder of scarlet rested on a great rack at the base of the tower, and Danny had no wish to hear the roar of that cylinder's stern exhaust for a time.

Even the novelty of flying the newest rocket-ship in the service had worn off. Besides, he had patrolled his route, and he told himself that the "Infant" needed a rest.

The "Infant," better known on the records of the A. F. F., as Morgan, David E., Lookout, Station 39-G, was sleeping soundly on the elevating table where a map of the district was mounted under glass. His cherubic face was pink and white, more suggestive of the age of three than of twenty-three. And O'Rourke, glancing at him protectingly, hung up a paper to keep the sunlight from striking the young man's face.

The Infant had been Danny's special charge from the day he entered the service, and now, except for the Chief and some other officials, only Danny knew that the Infant was there to teach and not to learn. For behind those eyes that might have been taken from one of Rafael's cherubim lay a brain that Danny had learned to respect.

"Fifteen minutes more, I'm givin' you," he said inaudibly; "then I'll be on my way, and you'll do your own squintin' and peekin'." But the Infant's fifteen minutes were cut to that many seconds—

Danny had been looking toward the south before he had turned to gaze at the Infant; his eyes came back to the same point to take up their reconnaissance. But now, where clear sky had made a blue back-drop for rugged peaks, was a line of black. And the line, while Danny watched in disbelief, moved like a smoky serpent; its head stretched out and out while from behind it there came the ominous line of black.

ALL this happened in a matter of seconds, and the moving head ceased at last to move; the line no longer grew. But, where it had been at first a thin mark of black, it changed now to billowing gray.

It was fifty miles away at least; but it showed clear and sharp. And the first gray had hardly bloomed from its black beginning before the long arm of Danny O'Rourke had swept the sleeping Infant to the floor, while, with the other hand, he swung an instrument of telescopic sights upon distant smoke.

He set it in careful focus—took a reading for distance—another for direction—and while he was doing it he was vaguely conscious of one single sharp flash in the sky above that far-off cloud. In his range-finder it showed once, like a glittering star; then it vanished, but the trained eye of O'Rourke observed its passage like a ray of light overhead.

The pink-faced youngster on the floor was still protesting sleepily when O'Rourke slammed down a switch and heard a voice answer promptly from an instrument on the wall. Danny shouted out his bearings on the fire:

"Thirty-nine-G! O'Rourke speaking for Morgan. Reporting fire on a wide front—bearing Two-0-Seven to Two-Four-Nine! And for God's sake, Chief, get a line on this quick. The whole thing shot up in a second—fifty miles of fire!"

Another voice broke in excitedly. "Station Fourteen-Fourteen-Fourteen!" The voice was stammering in evident confusion. "The whole earth has exploded—it's on fire now! I—I—"

The Chief's voice broke in with a quiet, "Bearing, please! Report your bearing, Fourteen!"

And the stammering voice steadied to give a figure.

"Headquarters speaking," said the quiet voice. "Orders for O'Rourke. For the love of Pete, get on that fire, Danny. Every instrument in the office is chattering. Every patrol ship has spotted that blaze. You can't all be crazy. It's in Section Eight—never mind the exact bearings—you'll find it without any trouble I imagine. Now beat it! And let me know what kind of a fire this is that starts on a fifty-mile front! You're in charge till I come."

TEN seconds later, had the Infant been watching, which he had not—for his eyes were all on the distant smoke—he would have seen the beautiful curving sweep of a scarlet projectile, whose screaming propeller swept her off and up; he would then have seen it lie back flat as the great stern exhaust made a rocket of the ship to send it roaring into the heights.

And in the air-tight cabin of the newest fire-fighting machine of the A. F. F., Danny O'Rourke pulled his body out of the slumped position into which his quick acceleration had forced him; then set his ship on her course to where a distant smoke made puffballs of gray against a cloudless sky. And, like his Chief, he was wondering with a wonderment that bordered upon disbelief what manner of fire this was that shot like a fifty-mile serpent across mountains and valleys.

He was over it in less than ten minutes, flying high to clear the tiny dots slipping swiftly across his view-finder. They were other firecraft; he saw them darting in and down from all sides. For himself, he took the line of smoke at its western end where it had begun. Here it would be at its worst, perhaps, although no reports were in as yet.

The radio had been bringing in messages unceasingly as patrols and firecraft answered the call. Some nearer than himself were reporting themselves "on the fire"; he saw them grouped in the usual echelon formation up to windward of the blaze. They darted down

and in as he looked, and Danny thrilled at the sight which had never yet failed to reach the core of his emotional Irish nature.

The smoke and fire swallowed them up; their red bodies and short black wings drove unswervingly into the holocaust of flame.

"Like a bunch o' bats out o' hell!" said Danny admiringly. "And 'tis hell they're goin' into!" Which fact there was none to dispute with Danny O'Rourke who knew, if any man did, the full truth of the remark.

HE saw them as they struck the fire; saw the whirling blast of snow that drove under them as they went into the fight with the wildest enemy of man; and he knew that a smothering blanket of carbon dioxide was driving with hurricane force upon the flames.

On the instrument at his side flashed the "Ascend!" order of the squadron commander, and an instant later the flight reappeared a half mile away.

The commander must have sighted O'Rourke's ship. "Shall we repeat over same course?" the instrument spelled out, while Danny, circling above, watched the effects of the drive.

It had checked the flames, that first blast of the CO_2 squadron; he saw blackened, jagged trees where a roaring furnace had been. But the flames were building up again. "Repeat!" O'Rourke answered; then watched them drive in again.

From a wooded valley beyond a low range came a call for help. A lone ship in the red and black of the service had driven down into that valley that was like a cauldron of seething flame.

"I can't touch it!" a thin voice said. "The up-draft kills my blast."

Danny O'Rourke was sending out another call. The answer came from powerful sending instruments.

"Nitro squadron Hundred and One, on the fire!" it said, and gave a position in quick figures. Danny's own voice transmitter was on. He snapped out the position of the lone fighter. "Get in there!" he ordered; "Show your stuff! No—wait! Follow me; I'll lead you in!"

And to himself he added: "Now we'll see what pure nitrogen will do in a real scrap."

He closed a switch, and from a compartment at his back a low whine rose and grew to a scream. It was echoed in a shriek more shrill from the bow where a port had opened to take in the air. And Danny knew that that air, of which eighty percent was nitrogen, was being rid of its oxygen in the retort at his back, and the nitrogen alone was pouring out beneath him in a tremendous and ceaseless blast.

The squadron had appeared—a row of dots that came in on a long slanting drive from the ten thousand level. They swung into faultless formation to "ride his tail" into whatever flaming breath he might lead. And Danny O'Rourke threw his red ship down and into the valley that seethed with a brew from the Pit itself.

THERE had been pines in that valley, and firs towering hundreds of feet in air. They were living torches now, half seen through a whirling chaos of flame. It billowed as if the very gases that burned were tortured in the burning. The black-red of smoke-choked flames parted at times to show a deadlier white light below—a white, glaring heat in the heart of this gigantic furnace—a scintillant, quivering horror on which Danny fixed the cross hairs of his sights as he rode his screaming meteor down into the pit.

"Bats out o' hell!" And now the brood was returning, it must have

seemed. But beneath them, as they passed, that vivid whiteness went dead. Yet before it changed Danny saw unbelievable things—pools of molten rock, glaring white through the smoke.

Up and out at the end of the valley! And Danny gasped for breath even in the shelter of his cabin's insulated walls. And, used as he was to the red menace that they fought, he went sick at sight of a message that spelled itself beside his controls.

"Ship number six down. Failed to come out." It was signed with the name of the squadron commander who had followed where he led.

And the valley! For five miles they had laid a blanket of non-combustible gases. For five minutes, perhaps, their course could be seen. And at the end of that time it was as it had been before, and the flames raged on unchecked.

His own Chief's number flashed before him; then a message that clicked across his scanning plate:

"O'Rourke! Get out of that hole! Nitrogen won't touch it; we can't pour in enough. It's the same all along the line. We'll have to break it up—smother it one part at a time. Have you tried your sound dampener?"

And Danny O'Rourke had the grace to blush even through the flush that the fire's breath had given his face. "Forgot it!" he shouted into his voice sender. "Forgot the ship had the little doodad on it!"

The Chief responded audibly. "You didn't forget to go first into that doorway to hell," he said drily. "You fool Irishman, go back down and try the thing; give the 'little doodad' a chance!"

ONCE more the red ship fell swiftly under Danny's hand. As before, the valley yawned like the living threat of a volcano in eruption. But this time, instead of the whining nitro-producers, there came from beneath the ship a discordant shriek like nothing that the quiet mountains had ever heard. And Danny's fingers played over a strange keyboard whose three keys were rheostats, and the crashing discord below rose to a horror of sound that tore and battered at the ship's thick walls to set the nerves of the crouching man a-jangle. But his eyes, watching through a lookout below, saw strange disturbances of the flames; he saw the masses of flame shiver as if stricken—fall apart—vanish!

And he held the sound controls at that same horrendous shriek while his ship swept on and the thunder of her passing was lost in the pandemonium that went before. But the valley, when the red ship had passed, was a place of charred skeleton trees—of gray, swirling ashes, and of embers, here and there, that blew back to life only to be smothered by the gases of the ships that followed in his wake.

And the voice that spoke from the instrument beside him still spoke drily. "There's fifty miles more of that ahead," said the voice. "Just keep moving along; we'll mop up behind you. . . . Oh, and by the way, O'Rourke, give my congratulations to the Infant on the success of his invention. His sound-dampener is some little doodad; we'll be needing more of them, I should say."

IT was an hour or more later at the Headquarters of the Mountain Division that the Chief amplified that remark in a way he himself could not have foreseen. He had been talking to Danny, and now on the wall of an adjoining room, where men sat at strange instruments, a red light flashed.

"We still don't know what started it all," the Chief was saying. "But it made a fine tryout for Morgan's invention. If I thought you and he could do it, I would believe you had started that fire yourselves for a"—his voice rose abruptly to a shout—"Man! There's the red on the board—a general alarm!"

"Throw the big switch!" he roared. "Cut us in, quick! Cut us in!"

Danny O'Rourke, under any ordinary circumstances would have been hugely amused at the extraordinary sight of the Chief of the Mountain Division in a ferment of excitement that was near hysteria. But the flashing of the red that swept like a finger of flame across every station number of the big board did not mean that ordinary matters were at hand. A voice was speaking; its high-pitched shrillness showed that the excitement of the moment was not confined to the office of the Mountain Division alone.

"A. F. F. Headquarters, Washington," it shrilled. "General Alarm. Chicago destroyed by fire. Flames sweeping in well defined paths across the country. Originated in Mountain Division. Cause undetermined. Three lines of fire reported; coming east fast — unbelievable speed. . . . There! Cleveland has got it; reports a path of fire has cut across city melting steel and even stone. . . . Now Buffalo! . . . God knows what it is." The voice broke with excitement for an instant; Danny could almost see the distant man fighting for control of himself as a maze of instruments about him wrote incredible things.

"ORDERS!" said the voice now. "All A. F. F. ships report to your Division Headquarters. Division officers keep in communication with Washington. Mountain Division send all equipment east. Flying orders will be given you en route. The country—the whole world—is in flames!"

Beside him, Danny O'Rourke heard the voice of his Chief. "Unbelievable — impossible — preposterous!" His voice like that other was growing shrill. "The country—world—in flames!"

But he found voice to snap out a command to a waiting officer in the doorway of the adjoining room. "Repeat general order. Send all craft east!"

To Danny he whispered. "Your 'little doodad'—I wish to heaven we had a thousand of them now! But what does it mean? Lanes of fire across the country—whole cities destroyed! What devil's work is this? . . . There's nobody who knows."

But Danny was staring as if he saw through the high, instrument-covered walls. Back to a valley of flame that was like a doorway to hell, where rocks, gray with the frosty years, had been melted to pools . . . back to a glinting light where something swift and scintillant had flashed once in a cloudless sky . . . back—far back . . . back to a street in a town half across the world, and a figure of a giant who strode away with a smile of triumph on his ill-formed face . . . but first that giant had melted his way through walls of stone; and, like the stone, steel bars and human flesh were as nothing before the invisible heat that came from a slender rod!

His own voice, when he moved his dry tongue to speak, came huskily; it was as if another person were speaking far off:

"I think you're wrong . . . yes, I thing you're wrong, Chief. There's one man who knows—and 'tis myself is that one. . . . One man—and the other is a beast like no livin' man on the face of the earth! *He*

knows—he and the devils he's brought with him!"

IT was an unsatisfactory interview that Danny had with the Chief. "You're crazy!" was the verdict of that A. F. F. official when Danny had finished. "You're crazy, or else—or else—" His voice trailed off; his eyes were on the moving letters that flashed their message of disaster in an ever changing procession across the scanning screen on the wall.

". . . outbreaks have ceased . . . tremendous destruction . . . no rational explanation . . . meteors, perhaps . . . thousands of lives . . . no estimate. . . ."

There seemed no end to the tale of disaster, and the Chief's voice died away into silence. If Danny was right he had no words to fit the unbelievable truth.

"Get into your new ship," the Chief ordered brusquely, "and take the Infant with you. I'll send a relief man to his station. Go east—lay your course for Washington; you'll get other orders on the way!"

And a half hour later the first rocket ship of the A. F. F. was blasting its way through the thin gases of the stratosphere eastward bound. But by now Danny O'Rourke had a more sympathetic listener than before.

"In big puddles it was, and lakes! 'Twas still melted, some of it, in that valley."

"Why not?" asked the Infant casually. "Radiant heat moves with the speed of light. We wouldn't think anything of focusing ten million candle power of light energy into a spot like that. Why not heat? Just because we haven't learned to generate it—focus it—shoot it out in a stream like water from a hose—there's no use in denying that someone else has beat us to the punch."

The Infant's calm blue eyes were upon the luminous plates of the ship's mirroscope where the swift moving terrain beneath them was pictured clearly. The mountains were behind them now; endless miles of ripening grain made the land a sea of yellow and brown and, across that ocean, like the lines of foam that mark the wake of ships, lay three straight lines of black.

"Meteors!" sneered the Infant. "Yet if you'd tell your story to some of these wise men they would die of laughing—and maybe that wouldn't be a bad idea, either; they will be dying in a way that's a damned sight more unpleasant unless someone finds how to catch these birds."

AHEAD of them the lookouts framed blue emptiness. Below, on direct sight, was but the vaguest blur that meant earth and clouds far beneath. Only the magnification of the mirroscope brought out the details, and on its screen the unrolling picture showed those three lines broadening and merging to widespread desolation; then the smoke clouds came between to shut off a world reeking with the fumes of destruction. An occasional flash of red wings showed where the units of the A. F. F. were at work.

They beheld a city, below them—and smoking ruins where three great gashes had been torn with torches of flame. To Danny there came a thought that was sickening: it was as if some great three-toed beast had drawn one paw, red with the blood of helpless humans, ripping across the bosom of the land.

His number was flashing on the call board that had been registering incessant orders to other craft. He cut in on the Headquarters wave.

"O'Rourke—Mountain Division—Unit Five!" he reported. "Do you get my voice or shall I send by key?"

The man at Headquarters did not trouble to reply to the question. His voice came faint but clear:

"Number Five — O'Rourke — Orders! If that new ship of yours has any speed, show it now! Bear on Washington! Get here as quick as the good Lord will let you! Mountain Division says you've got something good in that sound-dampener; if you have, we need it now!"

O'Rourke shot back a crisp acknowledgment; took a reading from two radio beacons; projected them on the map; and pricked a point at their intersection. He had his own ship on a line with the Capitol in a matter of seconds.

"And there's hell poppin' there, I'm bettin'! That Headquarters lad didn't tell much—he wouldn't be worth a dime on a newscast—but I gathered there was somethin' doin'."

He had spoken more to himself than to his companion who had been a silent listener to the incoming orders. But the Infant replied in his own peculiar way.

"The one you saw," he said inquiringly; "he did his dirty work with a little rod or tube, you said?"

WITH an effort, O'Rourke brought his thoughts in line with the question. "Oh, you mean the man-thing I saw in Stobolsk? Yes, that's right; he had a thing like a gun."

"And he held it in his hand?"

"In the big paw that passed for a hand, yes!"

"All right! Now think carefully, Danny, and tell me: was there anything fastened to it—a wire, perhaps—a connection of some kind with the ground?"

O'Rourke stared at the pink and white face of the cherub who sat with him in the control room of a rocket-ship that threw itself like a red meteor across the high skies. "You're a bit of a devil, yourself," he said wonderingly at last. "How in the names of the Saints did you know? Yes, there was a wire, and I had forgotten it myself. It hung down, I remember, from the butt of the thing. But not to the ground, Infant—you missed it there; 'twas looped back like into the folds of the damn blue nightie he wore."

"And then went to the ground," said the Infant imperturbably, "—through his shoes most likely; or, if the robe was metal, that may have dragged on the ground instead."

He smiled seraphically at the bewildered pilot as he added: "That's all, Danny, for the present. Fly your little tin ship. I've got some heavy thinking to do."

Danny heard him ask one cryptic question, but he asked it as one who knows that only from his own brain can come the answer.

"How do they get rid of it?" the Infant was demanding. "If they stay in the air, how do they get rid of the load?"

And Pilot O'Rourke was glad enough to leave the answer to that one to the Infant. For had not the Infant alone seen the only reasonable answer to the puzzle of the mysterious man? And Danny had learned that it takes a real man and a real mind to track truth to her hiding place and accept the absurd improbabilities on which truth rests.

THEY were approaching their destination when the Infant opened his Cupid's-bow mouth to pronounce one additional question. "How high," he asked, "will your little tin ship fly? I know they've reached just under a hundred thousand experimentally, but how high will this one go?"

"And that's a question neither you nor I can answer, Infant." Danny was working with careful

fingers at tiny levers; their control room was filled with whining whispers and thin shrieks. "We're goin' down now," he continued, and again flipped over the switch that would put him in communication with the Washington office of the A. F. F.

"O'Rourke—Mountain Division—Unit Five," he said quietly. "Approaching Washington at altitude sixty-five thousand. Descending. Orders, please!"

Within the control room, where the voice of a Washington operator should have answered on the instant, there was silence. The rocket motor had been stilled. The two men were suddenly breathless with listening — listening! — where was heard only the whispering shrillness from without. The whispering grew as the red ship slanted down into denser air; it built up in volume; it varied its pitch and timber till it sounded like echoing voices . . . ghostly voices and phantom words . . . like orders from the dead. . . .

And Danny O'Rourke found his eyes staring into those of the Infant, where he read only the confirmation of his own fears.

It was the Infant who first found words with which to break the dreadful silence.

"Headquarters is gone," he said in a strange, dry voice, "wiped out! They must have got it! It looks as if we were on our own.

"Where are you going?" he asked. "It's your ship."

And Danny answered with a single word, though he added others for emphasis under his breath:

"Down!" he said quietly. "And be damned to them!"

ROLLING smoke clouds came to meet them. Danny O'Rourke was watching his altimeter sharply as he neared the ground. But he glanced more than once at the smoke. It was shot through with tongues of flame as they settled down; that was only what might be expected. But Danny was puzzled by the gray-white whirls that rose through the billowing smoke, until he knew it for the dust of powdered masonry, and realized that below him, where great buildings had been, were tumbled ruins.

Beside his control board a radio warning was telling of approaching ships. Danny cut in on them on emergency wave-length, and found that two full squadrons of nitro-ships were at hand with others coming.

"Let them 'tend to it!" the pale-faced youngster beside him choked —one does not see his country's capital destroyed without a tightening of the throat. "They can cool it with CO_2 and put down a rescue squad, though what they can do in that furnace is more than I can see."

Danny nodded mutely; he opened the exhaust to the full, and the rocket-plane swept out on whirlwinds of raging fire and smoke, whose flames reached up even where they flew and licked hungrily at their ship.

Jarring explosions sent shudders through their craft. Ahead of them bright flashes illumined the swirling fumes where bursting shells marked the destruction of some ammunition stores outside the city.

And Danny, as he drove his red meteor into the clear air of the upper levels, was searching the heavens above for the enemy he had expected to sight down below. He knew now that his mad plunge into the seething flames was only a blind impulse—an effort to satisfy that demand within him for a foe upon whom to wreak revenge.

BESIDE him, his companion spun the dial of a receiving set for the Airnews Service; a

voice was shouting excitedly into their cabin: ". . . physicists unable to find cause . . . no meteoric material seen . . . . new rays . . . . enormous temperatures . . . some new and unknown conditions encountered in space—"

"Hell!" said the Infant wearily, and snapped off the instrument. "Meteors! New conditions in space! But, come to think of it, we can't blame them for being off the trail. You know that the bird that's doing this flies high and fast . . . and when he stops there's nobody left alive to tell of it! . . . And don't look for him here."

"Why not?" Danny demanded aggressively. "This ship isn't armed, but if I get my sights on that flyin' devil—"

"You won't," said the Infant darkly. "He's off somewhere discharging the load he's accumulated."

He reached for a map, stuck his finger on a point in eastern New York State. "Let's go there, Danny—and I'd like to get there *right now!*"

And Danny O'Rourke, who, ordinarily was a bit particular about who gave him orders, looked at the Infant's blue eyes that had gone hard and cold, and he swung his roaring ship toward the north and a place that was marked by a steady finger on the map.

NEW YORK was a place of flashing reflections far beneath them as they passed. Danny pointed downward toward the miniature city, where a silvery river met the sea; where a maze of flaming lights in all of the colors of the spectrum gave indication of activity at the great Navy Field.

"How did he miss it, the murderin' devil?" he asked. "How come that he hit Washington first? Did he have some way of knowin' that it was the heart of the whole country?

"And why pick on us here in this country? Or are we just the first, and will he spit his rage over the rest of the world before he's through? Is it the end of the world that's come?"

To all of which there was no answer. And at last, when New York had vanished, they came to a smaller city and a broad expanse of roof that took their wheels.

Danny followed where his companion led into great buildings and a place of offices where excited officials stood in knots about newscasting cones; then they were in a quiet room, in the presence of a lean-bodied man whose hawklike face turned flinty at some request the Infant made.

"What the lad wants, I don't know," said Danny to himself, "but whatever it is he won't be gettin' it from old Gimlet-eyes."

BUT he saw the Infant write something on a card and he heard him say, as he handed it to the official: "Send that to the President—*at once!*" And though the words were hardly audible they had a quality that brought an instant response; while the written words brought a portly man who shook the Infant's hand fervently and inquired what service a great electric company could render.

Danny heard Gimlet-eyes protesting; heard broken bits of sentences: ". . . the great Sorenson tube . . . he knows of our disintegrator . . . insists upon our furnishing . . . preposterous. . . ."

The portly man cut him short. "You will give Mr. Morgan whatever he wishes," he ordered crisply. Then Danny saw him clutch at a desk for support as still another man appeared at the open door to shout:

"New York! My God! New York's gone! Burning! The Empire State Building melted! Crashed! . . .

The whole city is being destroyed!"

And in the moment of numbness that seized Danny O'Rourke he heard the Infant say: "How soon can we have it? I want it in our ship—up above—an hour? We'll be there." But Danny had no further interest in the Infant's arrangements for obtaining some unknown equipment; he was plunging through the doorway and running at full speed toward the ramp where they had descended.

He knew dimly that the younger man had followed and was crowding into the cabin after him. Danny, as he locked the port and lifted his red ship off her guides, was fully conscious of only one fact: that a hundred miles south a city was being destroyed and that somewhere in the vast heights above the city he would find the destroyer.

THE Hudson that had been a thread of silver was no longer bright as they approached the city at its mouth; burnished now with its reflection of black smoke clouds and red tongues of flame, it vanished at last under a mountain of black that heaped itself in turbulent piles and whirling masses until the winds swept the smoke out over the sea.

And high above it all—so high that all clouds were below it—there hung in a lucent sky one tiny silvery speck. There was a delicate steering sight on Danny's ship; he could direct the red craft as if it were in very fact a projectile that could be controlled in flight. And under the cross hairs of that sight swung a silvery speck, while the man who looked along the telescopic tube cursed steadily and methodically as if in some way his hate might span the gap and reach that distant foe.

And then the speck vanished. Danny followed it with the powerful glasses of his sighting tube; he saw it swing inland—saw it move like a line of silvery light, almost swifter in its motion than his instrument could follow. But even in that swift flight Danny's eyes observed one fact: the enemy ship was coming down; it slanted in on that long volplane that must have ripped the air apart like a bolt of lightning. And Danny's red rocket swept out and around in a long, looping flight, while he laid the ship on the course that other had followed.

"That's one of them," he said savagely; "there must be two more. But I'll get this one if I have to crash him in air and smash my own ship right through him."

THE mind of Danny O'Rourke was filled with only one idea; he had sighted his prey—the ship in which sat a man-thing who had sent a terrible death to Danny's fellows. And, though his hands moved carefully and methodically, though externally he was cool and collected, within him was a seething maelstrom of hate. All he saw was that giant figure as he had seen it before; all he knew was that he must overtake that speeding ship and send it to earth.

He had even forgotten Morgan; perhaps he was never fully conscious of his coming from the moment when that other trembling, shaken man had shouted: "New York! New York's gone!"

"There aren't two more," the Infant was saying from his seat at the rear of the cabin: "there's just one. Those three lines were always parallel except when they widened out; that meant that he had gone up higher. If we ever see that ship, we'll see three discharge tubes for the ray."

Danny O'Rourke turned his eyes that had gone haggard and deep-sunk with the sights they had seen.

He stared vacantly at the Infant.

"Didn't know," he said thickly, "—didn't know you were here. I'll set you down; I'll let you out before I ram him. . . ."

For reply, the other pointed ahead. The red ship had torn through a layer of thick clouds; Danny was flying below them above a mountainous world of bare hilltops and wooded valleys. Directly ahead, hovering high over a mountain higher than its fellows, was the white craft of the enemy; Danny saw it in hard outline against the darker masses of clouds beyond. He saw that it was motionless, that a slender cable was suspended for a thousand feet below, and that the end of the cable, hanging close above the mountain top, was split into a score of wires that stood out in all directions, while, from each, poured a stream of blue fire.

And once more all this that he saw was as nothing to the pilot; all thought, too, of his fellow victim went from his mind. He could see only the white ship, doubly hideous because of its seeming purity; and, as before, he brought the cross hairs of directional sights upon it while he opened the rocket exhaust to the full.

But even pilot O'Rourke, with the highest rating in the A. F. F., could not follow the lightning-swift leap of the snow-white thing that buried itself in the smother of cloud banks above.

DANNY set his red ship down on that same barren hilltop; he motioned Morgan to follow as he stepped out.

"We're somewhere in Pennsylvania," he announced. "You're stayin' here. Sorry to dump you out like this, but you'll find a way out. Get to a radio—call a plane." He held out his hand in unspoken farewell.

But the other man disregarded it. "What's the idea?" he inquired.

Danny's reply came in short, breathless sentences. "Going up to find that ship. Ram it. No use of your getting smashed up, too. Good-by, Infant; you're a good old scout."

Danny's mind was all on what lay ahead; he was wildly eager to be off on the hunt. It took him an instant to comprehend the look from Morgan's steady, blue eyes.

"Listen!" the younger man was ordering. "You're not going to do that; I am! And not just that way, either.

"Did you see that cable and the electric discharges?" he demanded excitedly. "It's just as I thought: he accumulates a negative charge; he has to get rid of it—he's just like a thundercloud loaded with static—and the heat ray does it. I had it figured that way.

"Remember the little tube you saw before—that's why I asked about the wire. I knew he would have to ground it without its going through his body."

Danny O'Rourke was an intent listener now. When the Infant talked like this he was a person to be listened to with respect, even if all he said was not understood.

"Now," said the Infant with finality, "let's forget this idea of ramming him. You couldn't hit him, anyway; even a cruiser couldn't do it. If it could you would have radioed for a squadron an hour ago —you know that."

THE pilot nodded his acknowledgment. "But, my God, man," he exploded, "I've got to do something; I've got to try!"

"We'll do it," was the confident reply, "—or I will. Now we'll go back to the Consolidated Electric; they will have the Sorenson disintegrator ready. I'll put it in your machine and—"

"And what?" broke in the pilot. "Is this some new death ray? We've been hearing about them for years—just hearing about them. If that's what you mean, then your idea is all wet; it's worse than mine. I'm going up."

Perhaps the younger man saw something of the wild impatience in Danny's deep-sunk eyes. He laid a restraining hand on the pilot's arm while he explained:

"No death ray, Danny—that will come later; we haven't got it now. But we've got the disintegration of matter—the splitting of the atom, on something bigger than a laboratory scale. Sorenson did it. There is a flood of electrical energy poured out—streams of electrons—negative electricity. It leaves a positive charge that is tremendous if it isn't neutralized.

"I said that devilish white thing was like a thunder-cloud; well, I'll make your ship like the earth; then I'll bring them near each other—no need to ram him—and it will be like the hammer of Thor—"

The Infant's words ended in a crackling roar from above. Danny O'Rourke found his whole body tingling as if he were filled with stinging sparks; each single fiber of each muscle was twitching.

A blue light shone eerily overhead. He bent his stiffened, jerking neck till he could look—till he could see, with eyes that were filled with flashing fires of their own, other ripping blue flashes from the ends of outstanding wires, and above him, a thousand feet, the belly of a white ship.

And through the brain-hammering clatter of the static discharge he heard the voice of the Infant, whose words came jerkily between the shudders that shook him:

"He doesn't dare, damn him! Can't let the wires touch us. Has to—discharge—in air. . . . But he'll burn us—afterwards!"

"STAND still!" said Danny through stiffened lips. "Don't make a move! He hasn't seen us, it may be!"

The crackling discharge had ceased; the rain of miniature lightning bolts that had shot around them and through them had ended. The cable had gone up before their eyes and hidden itself in the white ship. The pilot's eyes clung to that white-bellied thing, so slender and round and gleaming against the dark clouds overhead; he saw it hang motionless for long minutes while it seemed that the breath in his throat must choke him. Then he saw that white roundness enlarge as the ship settled swiftly down.

It hung in another moment directly above their red ship. Danny saw three round holes open in the white shell—the three outlets that the Infant had predicted. It had descended noiselessly, but now there came from within a high-pitched whining hum. The dreaded heat and ray! They were about to see their own ship destroyed! And, as for themselves—! Danny was still waiting for the first devastating blast of intolerable heat, when the ship settled softly down.

Green port-holes stared at him like eyes. A door was outlined with a line of black that spread to a round opening as a door swung wide. A huge door in the side of a huge ship, but it was none too large for the giant figure that crept through.

And Danny O'Rourke stared wordlessly at the flat-nosed face above a robe of chilled steel blue.

"'Tis him!" he gasped out that the Infant might hear. "The same one—the devil I saw in Stobolsk!" And if any other identification were needed it came in the slender rod, whose heavy metal butt was gripped in the giant's hand. At sight of the wire looping back from the

weapon; at remembrance of the Infant's shrewd guess; and with the conviction that now this same weapon was to annihilate the only two men who knew how to combat this destroyer, Danny threw back his head and laughed—until his harsh laughter died away in a snarl of rage.

"Go on and do it," he heard, "you ugly devil. You killed those Reds; you've killed thousands of us since, you murderin' beast! Go on and kill us, too!"

THE slender tube was aimed at him squarely. Danny waited to hear the faint click that would mean his death as the invisible ray sawed into his body. Instead the huge figure leaned down to stare at the pilot; then straightened while a crooked smile of recognition appeared on the deformed face. . . . And the slender rod moved on—on—in a slow circle toward the other waiting man!

It clicked before it reached him. Danny heard it, and "No—no!" he screamed in a horrible voice. "Run, Infant! Beat it, for God's sake!"

The enemy was twenty feet away; it seemed as many miles to Danny as he threw himself at the foe. He did not see the ray strike. He heard only the Infant's steady voice calling: "Remember Danny—the Sorenson machine—if you live."

Then a blast of reflected heat swept upon him, and he felt himself stifling. There was a pool of molten rock, white and glaring with heat . . . and a puff of smoke, grayish black, and ashes that whirled in the wind that swept up from the pool. . . .

Danny tried to raise himself from the hot stone where he had fallen, so near he was to the pool of death. He saw the grotesque figure of the giant move over toward the red ship, look at it, sneer contemptuously, and turn back to his own ship of doom. He saw the black entrance swallow the huge foe and he saw the door close, while the great ship, so innocently white in its sleek slender roundness, rose again in the air where the clouds took it up.

And Danny, resting on scorched but unfeeling hands, stared after him until he got the enemy's direction of flight as he entered the clouds, then he turned towards a place of glowing rock where the air rose in quivering waves.

"You said it, Infant," he whispered; "you knew I was just a fightin' fool that wouldn't think the way you would. You told me to get the Sorenson machine—" He brushed at his suddenly blinded eyes with one seared hand, then turned to stare grimly and appraisingly where the white ship had gone.

"And I'm thinkin'," he told the beastly occupant of that carrier of death, "that you didn't shoot your damned ray quite quick enough. The Infant beat you to it! He got his message to me first!"

HOW he got to the flat-roofed landing zone of the Consolidated Electric, Danny, doubtless, could never have told. Nor was he aware of the hand that set in the forward cabin of his ship a strange machine. But he growled his instructions:

"Set it goin'! 'Tis the Infant's orders—I mean Mr. Morgan's. What the devil it is I don't know, but 'Turn it on!' he told me—'Have them put it on full!'" And, though a man whom Danny knew only as Gimlet-eyes stared at him curiously, he reached down to the apparatus, set a dial, closed a switch here and there, then stepped back.

But Gimlet-eyes ventured one protest. "You're not grounding it!" he exclaimed in a voice that was tinged with horror. "You'll get an

accumulation on your ship that will shoot off like lightning—millions of volts!"

"How long would that be takin'?" Danny inquired gruffly.

And Gimlet-eyes replied, as one who washes his hands of all responsibility in a rather horrible affair: "An hour—not more than an hour!"

"Then I'll just be drivin' around for an hour," said Danny, and slammed shut the door-port of the red ship.

THE red rocket drove in slow circles that were a hundred miles across while that hour passed and the numbness of mind that had held Danny in a stupor slipped away. For the first time he realized the emptiness of the world that the Infant had left; he knew with a sharp stab of self-reproach how much had gone from his life in that instant when he sprang vainly toward the giant enemy.

He called himself wild names for his fancied sluggishness. Then that, too, passed, and at thought of the weapon the Infant had given him and of the work that lay ahead, his haggard face forgot the lines that horror had drawn and relaxed into a tired smile that told of a mind content.

Gradually his looping whirls had carried him toward the east. Another city was being devastated by the enemy; that Danny got from the newscast. Only that and one other message broke the tedious eternity of that long hour.

Danny's number flashed on the screen beside his controls. Unconsciously he answered, but he sat up alertly at sound of his Chief's voice.

"I can't get anyone," the voice said. "Headquarters is gone; I just called you on a chance. And I believe you now, Danny. That devil wiped out a whole fleet of our planes; melted the cruisers with one shot, and the scouts couldn't go fast enough to escape. Only one got away. . . .

"But where are you? What's to be done? I've just got here. My God! What can we do?"

"Wait," said Danny O'Rourke calmly, and glanced at his watch; "wait for another ten minutes! He's over Boston now. And he's waitin' there for me—though he doesn't know it yet. But I'll be droppin' in on him."

"Don't be an utter fool, Danny," urged the voice of the Chief; "there isn't a thing you can do. You try to come down on him, and he'll do as he did with the cruisers—just slip aside like lightning and nail you with his damned heat ray when you're below! I'm near Boston now. You keep away. Where can I meet you? We've got to think—got to do something!"

AND Danny, before he opened the switch that ended their talk, said meditatively: "Like lightnin' he moves . . . but he'll have to move *faster* than lightnin' to dodge me. And if you're near Boston, stick around; I'm comin' now, but not to meet you, Chief; I've got another important engagement. I'm keepin' it for—for the Infant. And give the Infant the credit, Chief; give it all to him, he's earned it; he's paid for it in full." Then the snap of a switch cut off the sound of Danny's voice before it showed a tell-tale quaver.

It was steady some minutes later, when Danny swept in above the mounting clouds that he had learned to know. Beneath them invisible fingers of death were sweeping back and forth where men and women ran shrieking in terror or waited calmly and dry-eyed for the end. Above them a slender rounded thing wove its pattern of destruction back and forth . . . back

and forth. A spectral ship—a pale phantom, elusive and dimly seen until it came against the black of rolling smoke from below.

But to Danny O'Rourke, slanting down from tremendous heights, the white shape was never lost. On the cross hairs of his directional sights the ghostly ship hung, and Danny threw his own red rocket like a living flame over and down where the white one sensed his coming and waited.

Beside him a human voice, high with horror, called to him. "Come back!" the Chief of the Mountain Division was commanding. "Danny! For the love of Heaven, turn back!"

BUT the voice was unheard by Danny O'Rourke. There was another voice speaking . . . he could almost see the smiling pink and white face of one beside him who spoke of his "little tin ship" . . . spoke, too, of a white ship that would be like a great thundercloud . . . and of his own screaming meteor that was like the earth . . . and there was to be a messenger of death like the hammer of Thor that would flash between the two. . . .

Danny saw the white one slipping easily aside; the ship was swelling suddenly before him—it was close . . . but the jagged lightning—the ripping flash of blue that joined the two craft in a crashing arc—was neither seen nor heard by Danny. Danny was too busy to notice, for he was engaged in smiling converse with one whom he called the "Infant" and whose pink and white face beamed gladly upon him "like a damned little cherub," as Danny was telling him. . . .

But the Chief of the Mountain Division who saw all from afar could say nothing. He only stared from the lookout of his own speeding plane that framed a picture of two ships; where the red one, flaming from within, kept on in its swift, straight dive; while the white one fell slowly, turning sluggishly to show its gashed and blasted sides . . . till the black clouds wrapped them both in a billowy shroud. . . .

But clouds are no bar to man's inner vision. And the Chief looked through, as Danny had done, to see as in a lightning flash a world beaten to its knees, hopeless, ravaged and scarred—a world where courage might again be born—a world that would still be a world of men.

ASTOUNDING STORIES

For Science Fiction

STRANGE TALES

For Weird Fiction

The little discs came heading in a curve toward us.

(A Sequel to "Brigands of the Moon")

Wandl, the Invader

Part Two of a Four-Part Novel

By Ray Cummings

WHAT HAS GONE BEFORE

MENACE from the stars! Not one of us—my betrothed, Anita Prince, nor Snap Dean, nor his fiancée, Venza, the Venus girl, nor myself, Gregg Haljan—had any conception of the wild series of incidents which were in store for us when the summons from Detective Colonel Halsey came.

It was midnight—early summer of the year 2070 A.D.—when we presented ourselves at his Great-New York office. There were sinister implications in the facts he told us. A weird planet, a fifth the size of the moon, had come from interstellar space, and was now poised between the orbits of Jupiter and Mars. The public of the solar system's three habitable worlds — Earth,

Heavy in Gregg Haljan's heart lies the knowledge that his friends may be prisoners inside Wandl's mighty space ship—the ship he must try to blast from space.

Venus and Mars—were upon the verge of panic.

And there was a Martian criminal in Great-New York—one Set Molo, who was suspected of being an interplanetary pirate, the Grey Star-Streak. Molo was known to possess some sinister secret.

Halsey wanted Venza and Anita to trap him into betraying it.

With the eavesdropping audiphone we saw the Martians in a secret room of the notorious Red Spark Cafe. And caught a glimpse of a ten-foot hooded visitor, a thing seemingly without a face! It carried a black hat-box. The box lid briefly lifted to reveal a huge, palpitating, naked brain!

The audiphone connection broke. The hooded shape carrying the brain in the box escaped. Molo, accompanied by his sister, calmly remained in the restaurant.

We had seen and heard enough. The brain was a master intelligence, and the hooded shape its giant slave! A space ship from the Invading Planet was hovering this night near our moon 250,000 miles from Earth. Another was near Mars, and another near Venus. The new planet was inhabited—we had seen two of its strange beings—and it was about to attack all three of our habitable worlds simultaneously. Molo obviously had some connection with the invaders.

"You can't use Venza and Anita for a mission like that!" Snap gasped.

With a ray Halsey knocked Snap and me all but unconscious—and he sent the girls to trick this Molo.

When we recovered, Snap and I were sent to a conclave of officials and scientists. We saw another of these weird brains; heard it forcibly questioned by the scientists. It seemed to understand English! But it would not talk. And when the Japanese ambassador in exasperated fury gripped the withered little arm which grew by its ear, it shrieked with pain, burst its distended membrane and blood vessels—and died!

But it had not told the secret!

Tumultuous night! At dawn—so the conclave told me—I was to command an Earth space ship, the *Cometara*, first of our vessels to go out and attack that lurking enemy ship near the moon. Breaking from the conclave, Snap and I tracked Anita and Venza. The quest carried us down into the cellar depths of the great city. Molo had captured the girls. We arrived at his lair just as he was escaping with them.

Strange mechanisms were there. A ring of contact plates was set into the rock of Great-New York. The mechanism burst into a giant beam. There was a chaos of light and screaming sound. I saw Snap stumbling away as my senses faded.

I recovered consciousness at the Tappan Interplanetary Headquarters, near dawn. Snap had not been found. The contact beam of milk-white light which Molo had established stood like a great sword into the sky. Great-New York was in panic. The beam—light or fire?—a radiance of a new nature—could not be extinguished. For a million miles, or ten, or a hundred million, its radiance streamed into space.

I boarded the *Cometara* with my friend Johnny Grantline. He commanded its fifty fighting men and armament, and I navigated the ship. We saw, just before we started, a curious projectile leave the Earth. Was it Molo and his sister and the weird beings escaping, their purpose accomplished? It seemed so. And were the girls with them? And Snap?

I slid the *Cometara* up through the atmosphere, seeking the enemy ship lurking somewhere by the moon. The light beam from Great-New York still stood motionless. Another had burst into existence with its base in Grebbar of the Venus Free State—and still another simultaneously planted in Ferrok-Shan, capital city of Mars.

We could see them all now from the ascending *Cometara*—three swords crossing in the sky. What did they mean?

CHAPTER VIII

From Behind the Moon

"BUT will you swing east or the west of the Moon?"

"I don't know. We haven't decided."

Drac, my first officer, and I were alone in the *Cometara's* control turret.

"But the cursed ship was last seen right where we are now," Drac persisted. "If it went around the Moon—"

"Or if it's lurking near here, invisible, Drac? We don't know a damned thing about it. The nature of it—what it can do, or cannot."

We were some ten hours out from Earth. Over such short astronomical distances it was impossible to attain any great velocity. When once we were clear of the Earth's atmospheric envelope, the rocket-stream engines were useless; there was no air against which the force of their fluorescent streams

could be exerted. The *Cometara* was equipped also with tail-streamers of electronic nature. In the near-vacuum of space they exerted a slight pressure, useful for sudden curving and turning; but they had only a negligible influence upon the main velocity of the vehicle.

I used the repulsion of Earth upon our negatively charged stern gravity-plates; and with those of the bow electronified to the positive reaction, we were drawn forward by the Sun and the Moon.

For three or four hours I held to this combination. With steady acceleration we attained forty thousand miles an hour. But then I had to retard. In close quarters such as this, the retarding velocity must be calculated with a nicety many hours in advance. Through lack of that caution many an unskilfully handled freighter has overshot its mark and been forced, like a satellite, to circumnavigate the world of its destination until its unwanted velocity was exhausted!

WE hung now, very nearly poised, within some forty thousand miles of the surface of the Moon. Bleak and cold—sharply black and white—it hung in a gigantic crescent in advance of our bow. The Sun, whose attraction I had ceased using some hours back, was visible sharply to one side now. Its great gas streams of giant flame licked up into the blackness of the firmament. The sunlight caught the lunar mountains with a white glare, and left the valleys black with shadow. The moonlight and the mingled sunlight painted our bow. And behind our stern the great silver-reddish disk of Earth hung somber and glowing, with the configurations of the Pacific Ocean and the Eastern continents etched in delicate tracery.

And everywhere else was the great black enclosing firmament. Infinite hollow ball of nothingness with its myriad swarms of swimming star-worlds! The stars blazed with a new white glory never seen through the haze of an atmosphere. And like a little world in the vastness of this awesome void, we hung poised.

Grantline came into the turret. "I've got everything ready, Gregg. By the gods, once you can lay telescope upon that accursed enemy ship, I'm ready to hurl our bolts at it!"

"Good," I said.

But the thought of that—of hurling our bolts at this enemy ship—had struck terror into my heart for hours past. What a task was mine, with this, my first ship to command! With all my skill, I was trying to come upon this enemy. But I was convinced that Anita, Venza and possibly Snap—the three who in all the world held my affection—were upon that enemy vessel. Our bolts would stab at them; every resource we had would go toward killing them!

I HAD not voiced such thoughts. Grantline understood them, of course. But for the safety of the worlds, we must destroy this enemy if we could. What were the lives of two girls and a young man compared to that?

Grantline added, "You brought us here in record time, Gregg—I'll say that for you."

"Thanks."

"Are you going closer in to the Moon?"

"No, I don't think so."

"The ship couldn't be between us and the Moon. I've been in the helio room for an hour past—Waters and I—searching with the electro-telescope there. Nothing doing, Gregg. Not a sign."

"I know. Our instruments here show that."

"They might be invisible," Drac

put in. "We were just saying—you can't tell."

"I'll try the Zed-ray," I suggested. "Drac and I have it corrected. But I doubt if it would pick through the sort of invisibility this enemy would use."

Grantline nodded. "Or the Benson curve-light. You think the ship went behind the Moon? Or landed on the Moon?"

"It could have done either. Has Waters still got contact with the Earth? What do they say? Have they seen it?"

"No. Seen nothing. Why in the hell they haven't, I don't know."

"They've been somewhat busy," I suggested.

I made a sudden decision. It would take us two hours at least to make a careful scanning with the Zed-ray, and to take an elaborate series of spectro-heliographs of the Moon's surface (which might show the enemy vessel if it had landed there) was a laborious process.

I HAD a sudden conviction that both methods would yield us nothing.

"We'll go to the helio room," I told Grantline. "I'm going to try the Benson curve-light. If that ship is behind the Moon, we'll show it up. Drac, move us east. Set for a tangental curve, with an acceleration not to exceed five thousand miles an hour. You can easily make the calculations. I want us on a course to swing the Sun behind us. If they see us coming it will look as though we might be planning a South Pole landing on the Moon. Figure it out, Drac; use your wits."

Grantline and I left the turret, heading along the catwalk under the glassite dome toward the helio cubby, where the rotund, middle-aged Waters was in charge. It made my heart sink to think of the helio room. Little Snap should have been there—eager, dynamic, full of his wild schemes. With him here, I would have had new courage to hope for the girl's safety.

We crossed the transverse catwalk. The superstructure roof was under us. *Farther down, the narrow decks showed with Grantline's men grouped at the firing-portes, where his guns were mounted and ready.

"Ready," said Grantline, following my gaze. "Look at them! Just give us something to attack, Gregg."

A dozen guns, six on each side,

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* The *Cometara* was designed primarily for passenger traffic. She was cylindrical in shape, some two hundred and fifty feet from stem to stem. The engines and the various mechanical systems for the ship's operation were all in the hull: the pneumatic gravity-plate shifters, the air-renewers and circulators, the compression system, and the batteries for the Erentz oscillating current which circulated within the double-shelled walls of the hull and upper dome, absorbing the vessel's inner air pressure so that the walls would not explode from it, in the vacuum of space.

The hull was lined with the electronified gravity plates, positive for attraction, negative for repulsion. Within their leadenized cases they were inoperative; and shifting rods, operating by compressed air, slid them out of their protecting jackets into combinations desired by the navigator.

The top of the hull—as though a cylinder were sawed lengthwise—was a single deck over two hundred feet long, and at its broadest point amidship, some fifty feet wide. Upon this was set, near the bow, the smoking room cabin and men's lounge. Beyond that, amidship, was the passenger cabin superstructure, seventy-five feet long and fifteen feet high, and shaped to leave only an eight-foot deck space on each side. And, near the stern, the deck held another cabin structure—small cubbies for the officers.

Over all this was the great enclosing dome of alumite plates and glassite panes. It rose in the center a full fifty feet above the roofs of the three deck structures. Under it were the catwalks connecting the forward observation bridge, the bow control-room, the instrument and helio room, amidship, and the stern observation room further aft.

Upon this fateful voyage when I took command of her, the *Cometara* carried no passengers. Her rooms in the cabin superstructure were used now only by Grantline's fifty men; my few stewards and handling crew were housed in the hull.

were mounted at the deck firing-portes. It was emergency equipment. These portes were installed during the night just passed at the Tappan headquarters. The guns had an effective range of some fifty miles—an electronic blast which we could only hope would be destructive to our unknown enemy.

Destructive! As I saw those grouped men loitering on the deck, waiting for me to give them something at which to fire, I prayed I could do so; and yet there was the shuddering fear that the first blast from these guns would bring death to Anita. . . .

WATERS met us at the door of his cubby. His face was red; he mopped the perspiration from his bald head.

"I'm so glad you came! Will you want the Benson-light? I say, I've lost connection with the Earth—gone dead, ignoring us, maybe, with the rush of what they've got on their minds. I had the Washington transmitter. I say, five minutes ago they sent me a flash of the Mars and Venus news. Mars and Venus both sent ships—like ours—out to meet this damned enemy."

He gasped for breath; and then added in a rush:

"Both the Mars and Venus ships were destroyed and the enemy escaped!"

Grantline and I gasped with astonished horror.

"Destroyed!" I gasped. "How?"

Waters did not know. The news came, almost immediately after, that the Washington transmitter changed its wave-length and he lost connection.

"But why in heaven's name, man, didn't you ring and tell us?" Grantline demanded. "Destroyed—only that! Just destroyed!"

And we were endeavoring—like those Venus and Martian ships—to find this enemy!

"I was afraid to leave my instruments," Waters defended. "How could I tell—might be able to renew connection with Washington any minute. I thought so, at first; then I gave up. Come on in. Do you want to try the Benson curve-light, Mr. Haljan?"

"Yes," I said, "I do." We entered the dim helio cubby. "See here, Waters, have you any more vital news? The projectile that ascended from Earth last night—did the Washington observatory report what happened to it?"

"No, not a word. They lost it, evidently."

OUR electro-telescopes on the *Cometara* had not been able to locate the projectile. The large instruments of Earth had lost it. Was that because, with tremendous velocity, it had sped far into space, and being so small, had gone beyond their range? That was possible. It might not have come to this lurking enemy ship; it might have sped direct for the new planet, out beyond Mars.

Or, with some form of invisibility, it might be close to us now, just as the lurking ship no doubt was somewhere around here.

From the little circular helio cubby, perched here under the dome like an eagle's nest, I could see down all the length of the ship, and out the side portes of the dome to the blazing firmament. The Sun, Moon and Earth and all the star-field were silently turning as Drac swung us upon our new course.

Waters bent over the projector of the Benson curve-light, making connections. The cubby was silent and dim, with only a tiny spotlight where Waters was working and a glow upon his table where his recent messages from Earth were filed. Grantline and I glanced at them.

Panics in Great-New York, Greb-

bar and Ferrok-Shahn. . . . The three strange beams which the enemy had planted upon Earth, Venus and Mars still remained unchanged, standing motionless into the sky. I could see them now plainly from the helio cubby windows—great shafts of radiance sweeping the firmament.

Waters straightened from his task.

"That will do it, Mr. Haljan." He met me in the center of the cubby. "When you locate the enemy, don't you rather think they'll destroy us as they did those other ships?"

Grantline laughed grimly. "Maybe so, Waters. Let's hope not."

FAT little Waters was anything but a coward. But being closed up here all these hours with a stream of dire messages from Earth had shaken his nerve.

"What I mean, Mr. Grantline—prudence is sometimes better than reckless valor. The *Cometara* is no vessel of war. If the Earth had sent an interplanetary patrol vessel—"

"None were ready," I said impatiently. "You know that, Waters."

"I know," said Waters. "But I was thinking, if we had more knowledge of what sort of an enemy we're up against . . . and that damn light-beam streaming up here from Great-New York. What's it for? What are they trying to do to us?"

Grantline joined me at the Benson projector. "Can we operate it from here, Gregg, or will you mount it in the bow?"

"From here. When Drac's swing is finished—the course I gave him—I can throw the Benson-ray through the bow dome-porte. Waters, you're all done in—up here alone so long. Go below and sleep awhile."

But he stood his ground. "No, sir; I don't want to sleep. If you two—"

"We've had ours," said Grantline. "We'll call you if anything shows up."

Grantline and I had slept for a few hours soon after leaving Earth, and had eaten twice.

We sent Waters away. Again it struck me—if only Snap were here! . . .

"Ready, Gregg?"

"Yes. Throw that switch; I've got the range."

The coils hummed and heated with the current, and in a moment the Benson curve-beam leaped from the projector.* A narrow, white stream of light, it flung through our paneless cubby window-oval, forward under the dome and through the bow dome-bullseye. into space. I saw the men on the deck spring into sudden alertness with the realization that we were using it. The bow lookout on the forward observation bridge crouched at his telescope finder to help us search. From the control turret came an audiphone buzz, and Drac's voice:

"Am I headed right? The swing is almost completed. Shall I straighten now?"

"No," I said. "The swing doesn't bother us. But you do, Drac. Shut up."

I BENT over the field-mirror of the Benson projector. On its glowing ten-inch grid the shifting image of my range was visible—a

* The Benson curve-light was similar to an ordinary white searchlight beam, except that its path, instead of being straight could be bent at will into various curves—hyperbola, parabola, and for its extreme curve, the segment of an ellipse, gradually straightening as it left its source. It was effective for police work, with hand-torches for seeing around opaque obstructions. It had also another advantage, especially when used at long range: the enemy, gazing back to its source, would under normal circumstances conceive it to be a straight beam and thus be misled as to the location of its source. Or even realizing it to be curved, had no means of judging the angle of that curve.

curving, brilliant limb of the Moon, with the sunlight on the jagged mountain peaks; and everywhere else the black firmament and the blazing dots of stars.

Grantline crouched beside me. "I'll work the amplifiers. Going to spread it much, Gregg?"

"Yes. A full-spread first. What the infernal! We're in no mood for a detailed narrow search."

I gradually widened the light. Three feet here at its source, it spread in a great widening arc. With the naked eye we could see its white radiance, fan-shaped as an edge of it fell upon the Moon. And though optically it was not apparent, the elliptical curve of it was rounding the Moon, disclosing the hidden starfield to our instruments.

"Nothing yet?" I murmured.

"No."

"I'll try a narrower spread and less curve."

Grantline was searching the magnified images on the series of amplifier grids.

There was nothing.

For an hour we worked; and as part of my brain and my fingers tried the varying combinations of angle, the background of my mind was flooded with a conflicting web of thoughts. If only we could find the enemy ship, rush for it and destroy it! But what would that do, save kill Anita? Or again, I thought, "The ship is gone. We can't find it. Anita is gone—what can we do to save her?"

"Gregg! Wait! Hold it!"

I tensed, stricken. I held the angle and the spread of light steady.

"East, Gregg! Two seconds of arc, east; try that. The damned thing is shifting!"

He saw it! Something—a dot of black, infinitely tiny. He gripped me. "You look! It's at the western edge of the field; it shifts off—it must be in rapid motion!"

THEN I saw it—a mere moving dot of black. But suddenly some observation of the Benson-light was cleared, and it clarified. I saw a dot which I could imagine was a shape with discs along its edge, moving with high velocity, so that Grantline was shifting our field to hold it.

Ten minutes passed; the dot enlarged. We could see the dark shape of a vessel. It was no longer passing sidewise; it held midway of the mirror-image. And now it was rapidly enlarging. From its stern a very faint radiance seemed streaming out, as though that were its method of propulsion.

"Got it, Gregg! By God, that's it! Now we'll see!"

It was still well behind the Moon, disclosed by the curve of our ray. Had it seen us? Did it realize our light was curved? Then presently we saw that from its bow a very faint radiant beam was streaming. That could not be for propulsion. Was it a search beam?

Beside me I heard Grantline gasp. "Gregg, am I crazy? Or is that little bow beacon like the light-beam Miko planted in Great-New York? Opalescent! Can't you see it?"

There did seem to be a similarity, but thought of it was swept from my mind. Our cubby was ringing with signals. It seemed that over all the *Cometara* excitement was spreading. Both the bow and the stern observers saw the enemy ship now with their telescopes gazing directly along our Benson-light. They shouted to the man on the deck. Their signals ran in our helio to tell us. And Drac was calling:

"I've got the measurement of its velocity! Twenty thousand an hour now, but doubling every ten minutes! God, what acceleration!"

I flung off the Benson-light. The enemy ship had come from behind the limb of the Moon; our straight-

light telescopes showed it clearly. It was heading unmistakably in our direction!

Drac was pleading, "Ring us away! We need velocity! Are you coming to the turret?"

"Yes, I'm coming!"

Grantline and I rushed out upon the catwalk. Waters was mounting the spiral ladder from the deck.

"Into your cubby," I shouted. "Call Earth! Keep calling until you get them!"

"And if I get them?"

"Tell them what you see—what's happening! What the enemy looks like, and what it does to us! That's what they want—information—even if we're destroyed—information of the enemy. Stick at it, Waters. Now—right through to the end."

Grantline rushed for the deck. I gained the control turret. Drac, with his thin face white and set, met me at the door.

"An acceleration like that! We need velocity of our own! We've only got five thousand an hour!"

I nodded.

"We'll get more, Drac! Have no fear of that."

I set the gravity-plates for the greatest possible acceleration forward and added the stern rocket engines for narrow-angle maneuvering.

With gathering speed we plunged directly for the oncoming enemy ship!

CHAPTER IX

The Whirling Discs

"BUT there's something wrong, Drac."

"We've got ten thousand an hour velocity, and a grade 5 acceleration. It seems to me—"

Grantline had joined us in the control turret. "How far would you say, at a rough guess, that ship is from us now?"

"Thirty thousand miles. About that." Drac scanned his page of calculations. "Impossible to gage with any exactness; I can't figure how big the damn thing is."

"And they've got a forty thousand velocity. Added to our ten, that's fifty."

"And we're accelerating. In half an hour we'll be within range! Mr. Grantline, do you want us to pass within fifty miles? Mr. Haljan says—"

"But there's something wrong," I persisted.

For ten minutes now I had been aware that the *Cometara* was acting strangely. A sluggish response to the controls—I thought it was that; but when I called Franklin, our engine chief, who was in the main control room of the hull, he had not noticed it. Yet I was certain.

Grantline stared at me. "Something wrong?"

"Yes. I don't know what it is. Drac, try orienting us. I did it ten minutes ago." I shoved at him my equations, giving the angles with the Sun, Earth and Moon which we should now have. "There's our flight-course as it ought to be. Measure how we're heading—actual position. If it's what it ought to be, with the plate-combinations I'm using, then I'm crazy."

"You're not that," said Grantline. "Just naturally apprehensive."

But we were not where we should be! The *Cometara* was off her predetermined course! And then I realized the factor of error. There was a gravitational force here for which I was not allowing. The error was not within the *Cometara*. She was, as always, responding perfectly. But there was a force upon her, and not that of the Sun, Earth, Moon or the distant star-field. I had calculated all of those. It was something else. Some gravitational pull, so that we were not

upon the course of flight we should have been on.*

"But what could be wrong?" Grantline demanded.

It was Drac who guessed it. "That radiance from the enemy's bow?"

IT was that, we felt certain. Even at this thirty thousand mile distance, the bow-beacon of the oncoming vessel seemed streaming upon us. We could not see that it illumined the *Cometara,* nor could our instruments measure any added illumination. Our flight-orbit now would, if held, carry us with a swing some ten thousand miles above the South Pole of the Moon. It would cross diagonally in front of the trajectory the enemy vessel was maintaining. But we were off our predetermined course, with a side-drift toward the enemy! That bow-beacon radiance was exerting a force upon us—a strange gravitational pull!

Grantline gasped when we told him. "If it's that now, what will it be when we get closer!"

The minutes were passing. The thirty thousand miles between us and the enemy was cut to ten thousand; to five. The ship was soon plainly visible to the naked eye. Its visual movement—for all this time measurable only as a drift upon the amplified images of our instruments—now was obvious. We could see it plunging forward; could see that probably we would cross its bow. Within fifty miles? We hoped and guessed that would be the result, so that with this first passing we could fire our shots. Fifty miles of distance at combined speeds of some fifty thousand miles an hour! That would be something like three seconds from a collision. Though the danger of a collision—which both ships of course would do anything to avoid—was very negligible. In the immensity of space two objects so small could not strike each other, even with intention, once in a million times.

We could not calculate the passing so closely—but suddenly it seemed that perhaps the enemy

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* The intricacies of space navigation involving the laws of celestial mechanics are not unduly complicated for those trained in the science, but they are difficult to explain to the layman. I want to make clear, however, that a space vessel handles gigantic velocities, and gigantic distances. To one who seldom—or perhaps never—has made a space flight, it is instinctive to visualize the movements of an airplane, or a surface boat on the ocean, for comparison. But such a comparison is incorrect. The maneuvering space ship makes giant sweeps in which a considerable time is involved. We could not stop the *Cometara* with her present velocity in much under half an hour, and that only by plunging at the moon and using the moon's full expulsion. A circular turn, using only the gravity-plate forces, would be on a curve, the segment of a circle with a circumference of certainly twenty or thirty thousand miles!

The *Cometara,* as I have already mentioned, was equipped with rocket-stream engines. In the atmosphere, at very low speeds so that the vessel had a comparatively slight momentum, the pressure of the rocket streams against the air made her maneuver with rather a similar agility to a large surface liner. A turn could be made in a thousand feet or so.

In space now, we were using electronic rocket streams. They exerted a slight but appreciable force against the tiny material particles of the fluid—intensely rarefied fluid—we call the "ether." But with the *Cometara* having a headway velocity of twenty thousand miles an hour, the rocket-stream force was negligible indeed!

Yet the rocket streams played their part. The forces upon a space vessel are balanced to a nicety. The friction of the ether is very slight. The force of a rocket stream applied at an angle upon the vessel's stern has the effect of quickly slueing her around. Within a minute, or less, I could turn her sidewise, or run her bow vertically up; or turn her over. Yet all the while she would be speeding upon her almost vertical course.

I hope I make it plain. It was as though, for comparison, I were a canoeist, with a canoe in a broad, placid, but tremendously swift river current. My strokes of the paddle would quickly turn the canoe around—but stern first or sidewise I would still be speeding down the river!

could! The bow-beacon radiance, so obviously a miniature of the sword-light light-beams streaming from the Earth, Venus and Mars, now swung away from us and was extinguished. Whatever alteration of our course the enemy had made, they seemed to be satisfied! The passing would be to their liking. Would it be to ours?

GRANTLINE had left the turret. He was down on the deck, ready with his men. The guns were ready.

We had long since advanced beyond the possibility of mathematical calculations keeping pace with our changing position in relation to the enemy, but it seemed that the passing would be within fifty miles. Grantline's guns would carry their bolt that far. Would the bolts be effective? What would the enemy do to us?

It was barely two thousand miles away now. Two minutes of time before the passing. I stared at it—a long, low ship of dark metal, red where the moonlight struck upon it. I gaged its size to be about that of the *Cometara,* but it was much more nearly globular. Upon its top, seeming to project from the terraced dome, was an up-pointing funnel, like the smokestack of an old-fashioned surface steam vessel; or like a great black muzzle of an old-fashioned gun. And in a row along the bulging middle of the hull there was a series of little discs.

The vessel was still a tiny blob, but every instant it was enlarging, doubling its visual size.

Drac said tensely, "Fifteen hundred miles! We'll pass in a minute and a half."

I turned the angle of the stern rocket-streams. The firmament slowly began swinging. The enemy ship seemed swaying up over us. I was turning our top to it, so that Grantline might fire with his guns directed upward from both sides almost simultaneously. It might be possible, if I could roll us over at just the proper seconds.

But the enemy anticipated us. As they observed our roll, knowing we must do it for our own advantage, again the bow-beacon flashed on. It visibly struck us; bathed all our length in its spreading opalescent radiance. My heart leaped into my throat. Would that deadly ray annihilate us?

It seemed for an instant to do nothing. Our dome did not crack; there was no shock—but our side-roll slowed. The heavens stopped their swing, and then swung back! We were upon an even keel again. The enemy was level with our bow. Against the force of my turning rocket-streams the pull of this radiance had righted us! It clung a few seconds more, and again vanished.

Grantline's deck audiphone rang with his startled voice:

"Gregg, roll us over! Quick! I can only fire from one side."

"I can't!"

It was too late now. A few hundred miles of distance! Drac stood clutching me, staring through the porte. And I stared—breathless, waiting the result of these few seconds.

THE ships passed like crossing, speeding meteors. A few seconds of final approach; I saw the enemy vessel as an elongated, flattened globe, with a triple-terraced dome and terraced decks beneath it. That queer stack on top! The round discs, like ten-foot eyes, gleamed along the equator of the bulging hull. . . .

One of Grantline's guns fired a silent flash. Still out of range; surely at that second we were a hundred miles apart. The spit of the electrons leaped from our side. The enemy was untouched.

The thought stabbed me: "Anita! Not killed by that one!"

Another shot from Grantline. Fifty miles or less now. . . .

No result. It seemed that I saw the bolt strike. There was a reddening, a flash upon that bulging hull, but nothing more.

I was aware again of the enemy bow-beam swinging upon us. With Grantline's shots they knew they were within range. The beam was pressing us over again so that in a moment we would be hull-bottom to the enemy and Grantline could not fire!

He anticipated it. The ship was broadside to us. In the split second of that passing I saw that it was not fifty miles away—hardly ten! Grantline flung his remaining bolts. The enemy was a streaked blur going by; and all in that second it was past, reddening in the distance! Untouched by our shots! It seemed so. The bow radiance darted ahead of it. The globular shape, unharmed, dwindled in the distance behind us.

And it had done nothing to us! Attempted nothing! There was a second or so when I had that thought. The control levers were in my hands. I would shift the gravity-plates, and make the quickest turn we could. We would go around the Moon, probably, and come back within an hour or two. Perhaps our adversary would also turn, to encounter us again.

For at that second I had not seen the little discs! But I saw them now. They came sailing in a line, ten-foot, flat, circular discs of a dark metal; but they gleamed reddish where the sunlight painted them. They had been fastened upon the outside of the enemy vessel and in the passing they had been discharged. They sailed now like whirling plates. There seemed perhaps twenty of them, heading in a curve toward us.

GRANTLINE'S voice came again from the deck audiphone. "Missed them, Gregg! I thought so, but at least two of our bolts struck. But it didn't hurt them. Did you think so?"

I lifted the transmitter from the control table. "No, it seemed not. They must have a defensive barrage."

Drac was pulling at me. "Those things out there—those discs—"

Grantline heard him, and demanded, "What in the hell are they?"

We could not tell. It seemed that their curve would take them behind our stern. Grantline was adding:

"Will you turn, Gregg—try going back after that ship?"

"Yes."

But I did not. To the naked eye the enemy ship already had disappeared; with the telescopes we saw that it seemed to be turning. But I did not turn, for in a moment we were afraid of these oncoming discs! They passed within five miles astern of us, but in a great curve they swung and now seemed heading across our bow! With what tremendous velocity they had been endowned by their firing mechanisms! Their elliptical curve swung them a mile or so ahead of our bow.

They were encircling us like tiny satellites in a narrowing spiral ellipse. Our attraction—the normal gravity of our close bulk—was drawing them to us. They went around again, less than a mile away now. Their group had spread to cover an area of several hundred feet.

The men on the *Cometara's* deck stood gazing, surprised but not yet alarmed. The lookout calls sounded with the routine notification, each time the discs passed across our bow and stern. In the helio cubby, Waters was still trying to raise an Earth station.

GRANTLINE came running to the control turret. "Those cursed things, Gregg! If they should strike us. . . ."

I had set the gravity-plates into new combinations, turning our course downward, trying to swing us under the plane of the discs' orbit. But they swung downward with us. They were no more than two thousand feet away now.

Grantline swung on me. "At the next broadside passing I'll fire at them."

"Yes. Or wait a round or two until they get closer."

Drac looked up from his calculating instruments. "A circular rotation, horribly swift. But I've caught a photograph. Look!"

He had a still image of one of the discs. It had saw-teeth at its thin knife-like outer circumference. Whirling at tremendous speed, these saw-toothed metal discs would cut into our dome like a whirling lumber saw cutting into a log of wood!

At the next round, Grantline fired. The discs reddened a little, but came on unharmed. From the other side, in a few moments he fired again. Three of the discs seemed to have been caught full. His bolts, sustained for their fullest ten seconds of duration, and at this close, thousand-foot range, took effect. The three discs seemed to crumble with a puff of queerly radiant vacuum spark-glows. And then the discs were gone. A little hole in the formation showed where they had been.

But the others came closing in!

The *Cometara* rang now with the excitement and alarm of the men. Grantline could not reload quickly enough to fire at every round.

I had a sudden thought. With the rear rockets, I rolled us over. For a moment we were hull-down to the passing discs. From our hull gravity-plates I flung a full repulsion. Would it stave them off? Bend their orbit outward? It did not! Their course was unaltered!

Again Grantline was shouting at me through his audiphone.

"Roll us back! I must fire!"

It had been an error, that rolling; it lost Grantline several shots.

I SWUNG us level. The discs were so close now! They passed within a hundred feet; half a dozen of them were still closer. Gleaming, whirling circles, thin as knife-blades. They passed close under our stern, came broadside. . . .

Grantline shot five or six more into nothingness. The others swung at our bow. Would they strike? I held my breath, there beside Drac in the turret, both of us helpless to do anything. On the narrow decks under us, Grantline's men were alert as their guns—on one deck awaiting the next firing, and on the other frantically reloading.

They were tense, horrible seconds. The little group of discs skimmed our bow. One seemed to miss the top of our dome at the bow by inches.

Grantline's volley annihilated four more. But seven or eight were left. They swung in at our stern.

I was aware of a clattering confusion throughout the *Cometara*. The crew and stewards were running up to the bow quarter-deck from below. My second officer stood there, stricken. The stern lookout screamed his routine, futile warning.

I flung, in those seconds, our stern rocket-streams to the fullest sidewise angle. If only we could turn quickly enough!

Useless! I saw one of the discs strike our stern dome! Then another! Still others! They were silent blows, but it seemed that I could feel them cutting into the dome-plates.

The dome was cracking! Then,

after that horrible instant, came the sound: crunch, a rumble; the grind of crushed and breaking metal; then the puff and surge of the outward explosion.

I saw the whole tip of the stern dome cracking, bursting outward, forced by our interior air pressure! And over all the *Cometara* the outgoing air was sucking and whining with a growing rush of wind!

I shouted, "Drac! Close the stern bulkhead!"

I set the word-buttons for the distress siren, and pulled the lever. Its electrical voice screamed over all the uproar.

"Keep forward! *Take the space-suits! Prepare to abandon the ship!*"

CHAPTER X

Wreck of the Cometara

IN the midst of the chaos I was aware that all the remaining discs struck us upon the port stern quarter. The broken dome of the stern showed a jagged hole blown into space, but the up-sliding cross-bulkhead partially shut it off. Two or three of the crew and the stern lookout were gone behind that closing bulkhead. Their bodies in a moment would be blown into space!

"It may hold, Drac! Order Waters out of his cubby! Forward!"

I was calling the engine-room. "Order your men up by the bow, not the stern!" But I got no answer from the engine-chief.

I raised Grantline. "Order your men forward! Clear amidships! I want to close the central bulkheads. If the stern one breaks with the pressure—"

"Right, Gregg. Are we lost?"

"God knows! We'll know in a minute or two! Get all your men into their space-suits! Keep in the bow! Prepare the exit-porte there; we may have to abandon the ship."

"Right, Gregg. You coming down?"

"Yes. When I finish." I cut him off. "Drac, get out of here! Did you order Waters forward?"

"He won't leave."

"Why the hell not?"

"He thinks he may be able to get communication with Earth."

"He can't stay where he is! There's no protection up here! When that stern bulkhead goes—"

IT was breaking. I could see it bending sternward under the pressure. And at best it was leaking air, so that the decks were a rush of wind. Already Drac and I were gasping with the lowered pressure.

"Drac, you get out of here! Go get Waters; bring him forward. The hell with his transmitter; this is life or death!"

"But you—"

"I'm coming down. From the forward deck audiphone, call the hull control rooms. Order everybody forward and to the deck."

"But the pressure pumps?"

"I can keep them going from here."

I was setting the pressure levers. The pumps down in the hull responded. I speeded them up to full pressure, and speeded up the air-renewers. They still were working. Without this outgoing rush of air we would in minutes have had an interior pressure of nearly two atmospheres. It would hold our pressure for a few minutes longer at least. And I set the circulating system to guide the fresh air forward.

But it was futile against the sucking rush of wind toward the stern. And as the pumps speeded up I saw, with the little added pressure, the great cross panel of the stern bulkhead straining harder. It would go in a moment.

Drac was clinging to me. "Tell me what to do!"

"I have told you what to do!" I shoved him to the catwalk. "Get out of here! Get Waters forward. Get the men out of the hull!"

His young white face, his anguished eyes stared at me; then he turned and ran forward on the catwalk. I saw him forcibly dragging the bald-headed Waters from the helio cubby. It was the last time I ever saw either of them.

A BUZZER was ringing in the turret, and I plunged back for it. The exertion put a band of pain across my chest; a panting constriction—from the lowering pressure.

"This is Haljan. You, Fanning! Get out of here."

Fanning, assistant engineer, was still at the pressure pumps. His voice came up:

"Pumps and renewers working. Will you use the gravity shifters?"

"Hell, no! Get out of there, Fanning. We're smashed! Air going! It's a matter of minutes—abandoning ship! Get forward to the deck!"

I slammed up on him. The stern bulkhead cracked with a great diagonal rift. I waited another moment to give Fanning and any others time to get forward; then I slid all the cross 'midship bulkheads.

It was barely in time. The stern bulkhead went out with a gale of wind, but the barrier amidships stemmed it. Half of the vessel sternward was devoid of air, but here in the bow we could last a little longer. Beneath me I could see Grantline's men—some of them, not all—and a few of the stewards, crew and officers, crowding the deck, donning space-suits. The two side chambers were ready; half a dozen men crowded into each of them. The deck doors slid closed. The outer portes opened. The helmeted, goggled, bloated figures were blown by the outgoing air from the chamber into space. Then the outer slides went closed. The pumps filled up the chambers; the deck doors opened again. Another batch of men rushed in. . . .

I saw Grantline, suited but with his helmet off, dashing from one side of the deck to the other, commanding the abandonment.

The central bulkheads seemed momentarily holding. Then little red lights in the panel board before me showed where in the hull corridors the doors were leaking, cracking, giving away, breaking under the strain. The whole ribbed framework of the vessel was strained and slued. The bulkhead slides no longer set true in the casements. Air was whining everywhere and pulling sternward.

IT was the last stand. I could not set the bow bulkheads; they were forward of all our men. Through the glassite panel of the central barrier up here under the dome I could see the wrecked and littered stern. Bodies were lying there on the deck; the stern observation man was still in his nest up in the catwalk, his body slumped over the low railing with his arms dangling, gruesomely swaying with the shuddering ship.

I was aware that the alarm siren had ceased. There was a sudden stillness, with only the shouts of the remaining men at the exit-portes mingling with the whine of the wind and the roaring in my head. I felt suddenly detached, faraway. My senses were reeling.

I staggered to the gages of the Erentz system, the system whereby an oscillating current, circulating within the double-shelled walls of hull and dome, absorbed into negative energy much of the interior pressure. The main walls of the vessel were straining outward. The *Cometara* could collapse at any moment. I started for the catwalk

door. The electro-telescope stood near it, and I yielded to a vague desire to gaze into the eyepiece. The instrument was still operative. I swept it sternward; picked up in a moment the vanishing enemy ship.

But it had not vanished! By what strange means I cannot say, its velocity had been checked. A few thousand miles from us, it was making a narrow, close-angle turn. Coming back? I thought so.

I suddenly realized my intention of having all the gravity-plates in neutral before abandoning the ship. I seized the controls now. An agony of fear was upon me that the shifting valves would fail; but they did not. The plates slid haltingly, reluctantly.

I RECALL staggering to the catwalk. It seemed that the central bulkhead was breaking. There were fallen figures on the deck beneath me. I stumbled against the body of a man who had tangled himself in the stays of the ladder rail and was hanging here. His thick tongue hung from his gaping mouth.

I think I fell the last ten feet to the deck. The roaring in my ears, the bands tightening about my chest encompassed all the world. I had a moment when I slid into a tortured unconsciousness. Then I was on my feet again, and I stumbled over another body. It was garbed in a space-suit, with the helmet beside it. I stripped it of the suit. I was panting, with all the world whirling in a daze, bursting spots of light before my eyes. Stars! Bursting stars! The end of the world! So this was death. . . .

It took all my will to fight my roaming, drifting thoughts. Not death!—I was fighting for life. Ten feet away down the deck was the opened door of the pressure chamber. A bloated figure came into my dream-like vista, moving for the pressure door. It turned, saw me, came leaping and bent over me. I saw behind its vizor that it was Grantline. His bloated, gloved hands helped me don my suit. He helped me with the helmet.

That blessed air! I drew it in cautiously. The metal tip on Grantline's gloved hand touched the contact-plate on my shoulder. His voice sounded from the tiny audiphone grid within my helmet.

"You, Gregg! Thank God I found you! All right?"

"Yes. All—right."

My head was clearing. This blessed air of life!

"I'm—all right. Waited too long."

"I've got the chamber ready. We're the last, Gregg."

"That—accursed enemy ship—it's turned. Coming back."

HE did not answer. He broke contact, pushing me ahead of him. There were many bodies here to stumble over.

I gripped his shoulder. "You're sure there's nobody else to save?"

"No. I've been everywhere I could get. The central bulkheads are almost gone."

He pushed me into the pressure chamber. There was hardly need to close the door after us. I stood gripping him as we opened the small outer slides. The abyss was at our feet. The outgoing wind tore at us like a gale, so that we stood gripping the casements.

"Thank God you've got a power suit, Gregg. So have I—and there weren't many. We must keep together if we can."

"Yes."

I could feel the floor grid of the chamber shuddering beneath my feet. The *Cometara* was cracking, bursting outward throughout all her length. At any instant she might collapse and we would be crushed in here by falling ribs of the ship.

For a moment we stood poised. Beneath us, here at the brink, were millions upon millions of miles of emptiness. Remote, unfathomable void, here beneath this threshold! Blazing worlds down there in the black darkness!

"Good-by, Gregg. It may be the end for us."

"Good luck, Johnny."

His bloated figure dropped away from me. I waited just an instant, and then I dove into space.

CHAPTER XI

The Struggle in Space

THIS strange plunge into the abyss! For a moment there was a chaos of strangeness, the wrench to my senses of the transition. I had been the inhabitant of a little world—the *Cometara*—with gravity beneath my feet. Now, in a breath, I had no world to inhabit. I was alone in space—no gravity; nothing solid to touch. Emptiness!

I was in a world to myself, and the abnormality of it brought a mental shock. But in a moment the adjustment came. I passed the transition—the sense of falling.

The firmament steadied, and my senses cleared. My dive from the *Cometara* carried me in a slow arc some three hundred feet away. There had been a sense of falling, but no actual fall. In fact, the reverse. I went like a toy boat in water shoved by a child, quickly slowing, until in a few moments the velocity was gone and I hung poised.*

My forward velocity was checked; for an instant the *Cometara* held me. I saw Grantline's bloated form not over fifty feet from me. He waved an arm at me.

Out here in the void I lay weightless, as though upon an infinitely soft feather bed. I could kick, flounder, but not endow myself with motion. I craned my neck; gazed around through the bulging vizor pane.

The Earth and the Sun hung level with the white star-dots strewn everywhere. I could not see that unknown light-beam from Great-New York; it was shafting out now in the other direction, so that the Earth hid it from me. Venus was visible, to one side of the Sun. The enemy light-stream from Grebbar was apparent; and as I turned my body and bent double to look behind me, I saw Mars and the sword-like ray from Ferrok-Shahn. The beams streamed off like the radiance of the Milky Way, faintly luminous but seemingly visible for an infinite distance.

THE *Cometara* was obviously falling now for the Moon, drawn irresistibly—and all of us with her—toward the lunar surface. It

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* Upon Earth, with the mass of the globe always beneath us, we have become accustomed to the idea of falling whenever we have nothing solid upon which to rest. Earth's gravity, when our body fails of support and falls, draws us to the Earth's surface with an initial velocity of slightly over 16 feet the first second. That velocity is swiftly accelerated.

With my plunge from the *Cometara*, the reverse was true. It was as though I were not falling, but leaping upward from a very small world with a very slight gravity. My velocity immediately retarded, with the mass of the vessel pulling at me so that in a few moments my movement was checked.

Of all the laws of science which man has discovered, I think those of celestial mechanics are most impressive and beautiful. A million million distant worlds were here. Each of them, inversely as the square of its distance from me and directly as its mass, was pulling at me. And I was pulling at them. My moving body shifted the Earth and all the stars just a tiny bit in those moments.

"Thou canst not touch a flower without troubling of a star."

The ancient poet said that. And it is true.

How nicely balanced, these intricate, gigantic forces! The stars pulled at me, and I at them. The Sun, the Earth, the Moon, the *Cometara*, all exerted their differing forces—and in a moment, all reached a balance.

seemed so close, that black and white, mountainous disc! We were, I suppose, some twenty or thirty thousand miles from it, gathering speed as it pulled at us. But that motion was not apparent now. Distance dwindled all these celestial motions, so that all the firmament seemed stricken when my own velocity was stopped. Everything stricken, frozen into immobility.

But there was some motion. Twenty or more bloated figures—the survivors from the wreck of the *Cometara*—were encircling it in varying orbits. Revolving around it, like tiny satellites! Some were closing in, drawn against it. I saw one plunge against the wrecked dome, and begin crawling, like a fly.

And I found now that the balanced forces of the firmament were molding my orbit also. My outward plunge was checked. I poised for an indeterminate instant, and then I took my orbit. I too was a satellite of the *Cometara*."*

I gazed at the wreck of the *Cometara*. My ship! My first command! So smoothly, confidently rising from the Earth only a few hours ago; and she had come to this! She lay askew in the heavens. The dome was cracked throughout all its length and smashed like a flimsy shell at the stern-tip.

My poor *Cometara!* I could see the interior litter beneath the dome—the twisted and strained lines of the hull. A dead ship now—the mechanisms stilled; dead and silent inside, with all the warmth gone. All the air dissipated, so that in every cubby, every dark corridor of that broken hull there was the coldness and silence of interplanetary space.

My first command; and in a few short hours she had come to this!

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* Nothing in the Universe can ever be stricken of *absolute motion*. A body is at rest only by comparison with something else momentarily endowed with an identical absolute motion. The *Cometara*, dragging me with it, was falling upon the Moon. The Moon was encircling Earth, and being dragged by Earth around the sun. And the sun itself was speeding somewhere, at some unknown velocity.

All this while I seemed poised—visually poised—because just for that moment my movement *directly away from the Cometara* was stilled. But I had, as a product of all the other velocities showed me, a side-drift, so to speak. When we leap upward a few feet from Earth, that drift is not noticed. The giant bulk of Earth snaps us, apparently, immediately downward.

But my leap from the *Cometara* was very different. I went out at a tangent—the segment of a curve; I poised and began falling back, also upon a curve.

Again there is a beautiful balancing of forces. It is not very complicated and is worthy of explanation here since it involves phenomena we see about us in our everyday life, and perhaps do not understand. Earth goes around the sun, and stays in its predestined path. Why? The Moon goes around Earth. Why does it not sail away, or fall against us?

A balancing of forces. By the law of inertia, a body in motion will remain in motion unless something stops it—and it will go *in a straight path*. Every curve, by natural law, tends to straighten. It *will* straighten unless something stops it. But there is no straight path of movement, because something always interferes!

(There was, in the previous, the Twentieth Century, a very great thinker, one Albert Einstein. He found a way of saying all these things differently—so different in fact, that for many years scientists, and himself included no doubt, believed his ideas were different. But now it is known they were not. And so to-day, the simpler and far more understandable methods of expression evolved by his predecessor, Newton, are largely used.)

The Moon, for instance, if it could be stricken of motion with relation to Earth, would fall upon us. Conversely, if Earth and the Moon by gravity did not pull each other, the Moon would fly off in a straightening path—a tangent.

But the two forces are balanced. The result is a curve. Not a circle; but, almost always in celestial mechanics, it chances to be an ellipse.

A small boy, whirling a toy at the end of a string, may provide an illustration. The string is like the force of gravity holding the moon and earth together. The force of inertia makes the moving toy desire a straight path. It pulls at the string, but it cannot escape, so it takes a curve.

I suppose these thoughts swept me within a few seconds. I saw myself starting to revolve in my orbit. Perhaps my motion would carry me around indefinitely, or I might be drawn down to the vessel as those other survivors had been drawn. I saw other figures now on the dome, helpless there like flies with plucked wings.*

Grantline, with one of the few power suits, was coming toward me now, with tiny fluorescent streams back along his body from his shoulder blades. I switched on my own mechanism. It moved me toward him, and our own gravity attracted us. We shut off the power when twenty feet apart; drifted together; contacted; bounced apart like rubber balls as our inflated suits struck. Then in a moment we had drifted back and clung.

I TOUCHED the metal plate of his shoulder.

"Working all right?"

"Yes. Thank God for this much, Gregg. I wonder how many are alive."

In the chaos of the abandonment, many of the men's air mechanisms had failed to operate. It is always so in times of disaster! We could see, revolving around the wreck, and motionless against its dome, those horrible flabby deflated suits where the delicate Erentz mechanism had failed; within was only a corpse.

"Too many," I said. "And not more than four or five of us with power. What shall we do first? Round them up? We must all get together—all of us who are alive."

His answering voice was grim. "We can tow them from the wreck. Six or seven of us altogether have power. Do you suppose we can get away, Gregg; get loose from the ship before she falls?"

Only Providence—and trying it—could tell us that. The *Cometara*, and all of us with her, were plunging for the Moon. We would seek out the men who were alive and tow them in a string. If we could break the gravity pull of the ship, and then struggle upward from the Moon, we could maintain ourselves here in space until perhaps some rescue ship from Earth, Venus or Mars would come and pick us up.

To what slight hope does life cling!

"You take one side, Gregg; I'll take the other. Don't go aboard; she might collapse—you can't tell. Collapse and crush you. Pick up any of the men who are alive and without power. The others with power suits will do the same."

"We'll meet out here, about where we are now?"

"Yes. And hurry, Gregg! Every mile toward the Moon makes it that much harder. We're falling fast."

"Good luck!" I shoved away from him. And within a minute, as he went in an arc toward the *Cometara's* bow and I toward her stern, I suddenly thought of that returning enemy vessel! My last look through the electro-telescope had shown that she was returning, and then I had forgotten it!

MY gaze swept the firmament now. I had no telescopic instruments within the helmet. With

* The purpose of abandoning the *Cometara* was primarily that she was falling to the Moon. And aboard her, there was the immediate danger—which as it happened did not occur—that in a great air-explosion her interior would be strewn with falling girders and collapsing walls.

It had been obvious immediately that the failing air would make inoperative the gravity-plate shifting mechanisms. Repulsion to stay her fall would merely turn her over, so that the opposite, attractive plates would pull her with added velocity to the Moon's surface.

At the abandonment, all the plates were set in neutral, and with the failing air, they did not shift, but remained there. It was the safest procedure.

the naked eyes the enemy ship was not in sight. But I knew that meant little. Within a moment she could come in view and be here, if she were passing with any great velocity.

I came to the first drifting figure—a deflated, flabby suit. I reached for the helmet; gazed into the vizor at the horribly contorted face. The eyes protruded; the puffed tongue choked the gaping mouth. I recognized one of my crew.

I cast him loose and sluggishly moved on. The body followed after me a little, as though reluctant to have me leave it.

There were on the *Cometara*, at the time of disaster, some sixty-odd men. Perhaps forty had gotten away. And I could see very soon that not more than ten or fifteen out here were alive. Two with power were ahead of me now, slowly floating past the wrecked dome of the stern. One had picked up two others, found them alive, and was towing them out. They went past me, very slowly moving so that I could see that two were all one of us could tow and attain any velocity at all.

I contacted with the leader. He was one of Grantline's men.

"Two or three hundred feet out," I directed. I gestured. "Grantline told us to meet out there. I'll tow others."

"Yes. Go slow—you can't handle more than two. And so many dead! Around the stern you'll find—God! Haljan, look!"

A MILE from us the enemy ship was in view! Passing—no! Stopping! With what incredible retardation had she plunged into view, was here, and yet had no great forward velocity! She seemed no more rapid than a great air liner winging past—so close that her reddish-tinged bulging hull length showed clearly. The discs were gone. The funnel set on top of her was sloped diagonally toward us as she rolled on her side, so that momentarily I could see down into it. There was some mechanism down there. The bow radiance was a narrow opalescent beam in advance of her bow.

"Slowing, Haljan!"

"Yes! Stopping! Don't try to meet Grantline! Tow your men away! Get away!"

"Or should we board the *Cometara?* Hide, and—"

"No! They've come back to bombard her!"

I kicked at him violently. With his two drifting figures clinging behind, he swung past me. I headed behind the stern. Upon its torn and dangling framework seven or eight of our men were glued, lying there inert, all deflated—dead. I caught a glimpse of the interior of the stern; the littered deck; men lying there who had been stricken before they had time to get into their suits.

On the outside, forward, I saw Grantline come rounding the bow, towing a figure and heading for another. On the outside of the bow-peak a group of others were perched, gesticulating for help. I started that way; then I saw another, and nearer, figure in a power suit heading for them. I swung back. There were two bloated figures on the outside of the under-hull whom I could more quickly reach. Inverted flies! Their feet were on the keel, their heads pointing downwards. They stooped and waved toward me.

I took a swoop. Passing close down the hull, my rocket-streams struck the hull plates and gave me sudden downward velocity. I shot down, out past the keel. And again I saw the enemy ship. She hung poised, no more than two miles away. And as I looped over, with all the black, star-strewn firmament

in a dizzy whirl—the great Moon-disc first above, and then below me—I saw the bow-beam of the enemy swinging. It came to the *Cometara,* and there it clung.

I HAD gone perhaps fifty feet below the keel with my dive when I righted. I was mounting. I saw the opalescent ten-foot circle of the beam moving along the *Cometara's* hull. It seemed to do no damage. Then suddenly it darted down and clung to me!

I felt nothing save the impact of a gentle push. Something shoving with a ponderable force against me!

I saw the *Cometara* receding; the heavens swinging as I turned over. The red disc of the distant Earth swooped. The Moon surface momentarily seemed rotating and lifting above me.

I was helpless, rolling—then whirling end over end. Then again I steadied. The beam was gone from me.

I saw the *Cometara*—a full mile away from me! The enemy ship was again in motion, moving toward me, and between the *Cometara* and the Earth. And the beam was steady upon the *Cometara's* mid-section.

The *Cometara* had a new velocity now! I could not miss it. She was dwindling rapidly in visual size; relative to me, she was receding! Falling upon the Moon! More than that, being pushed downward by the repulsive force of the strange enemy beam upon her. I stared, as with all the little dots which were our men around and upon her, she went down into the void.*

I found myself presently alone up here, with the enemy ship hovering nearby. Its maneuvering to thrust the wrecked *Cometara* toward the Moon had brought it within a mile of me. The bow-beam was still on the *Cometara;* and then abruptly it vanished.

The *Cometara* had almost dwindled beyond the sight of my unaided vision. By chance, undoubtedly, the beam had fallen upon me and thrust me from the wreck. I was alone up here now with the enemy. But they may not have seen me, noticed me—or cared. I found the power mechanism intact. I turned it on; slowly, like a log in water, I began moving away.

A minute; five minutes. The *Cometara* was lost. Grantline, all the men, were lost. With that added downward thrust they could never free themselves from the falling wreck. . . .

I WAS jerked out of my thoughts by the sight of an oncoming red blob. Something coming from the enemy ship—red with the sunlight and earthlight; silvered by the Moon and the stars. It took form. It was a disc! Another of those cursed whirling discs, sent now to annihilate me!

I thought so. Then, when it was a quarter of a mile away, I saw that it was a disc which was turning slowly. Rocket radiances came from its rotating circumference. It came sailing directly for me, so swiftly that my own little gathered velocity was futile.

Another minute and I was caught. I saw that the disc was some fifteen feet in diameter, and that it bulged, so that within its convex floor and ceiling was a space of several feet.

I cut off my power and with pounding heart lay waiting. The space-suit had no weapons for equipment save a knife, hung in the belt. I drew it out; held it in my gloved fingers.

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* It was found, when later the warships of the allied Earth, Mars and Venus encountered this beam in its several diversified forms, that at will it could be made either to repulse or attract whatever it fell upon.

Futile defense! The disc sailed upon its level, vertical axis. Its rotation slowed. I saw little windows set around its convex middle.

It came up and bumped me with its metal side. I kicked away; shoved off. Shapes were moving in a dim interior light behind the porte-panes. Little hand-beams of radiance darted out. They seemed to seize me—draw me. . . .

I found myself glued helplessly to the convex outer surface of the disc. The rotation gathered speed again; but I looked presently only at the gleaming surface to which I was pinned. Had I been a metal bar upon the horns of an electro-magnet, I could not have been more helpless.

An interval passed. With the contact-plate of my fingers against this hull it seemed that I could hear voices within—strange, indistinguishable words. I twisted, but could not see into the porte.

Again the rotation was slowing. The near shape of the enemy vessel swung past; and again and again. I saw that we were over it, dropping down into the wide black opening of the funnel-top. It yawned presently like a great black tunnel, into which we fell.

The jar of landing knocked me loose, and no doubt the attraction radiance also released me. I fell another space; bounced up and sank back. I thought that something like a sliding porte-door closed over me.

And then, in the dimness, figures were gripping me. I lashed and struck, but the knife was wrenched away.

I was a prisoner in a pressure-porte of the enemy ship!

CHAPTER XII

The New Existence

IT seemed that the small room had a very faint radiance showing through my visor pane. Narrow enclosing walls were visible. It was a triangular-shaped space, fifteen feet or so down one side and with a concave ceiling overhead. I was lying on the floor. The darkness at first had been impenetrable. The figures which had flung me down and seized my knife were gone. I had not seen them, nor where they went.

For a moment I lay, cushioned by my bloated suit. It seemed then that a very queer gravity was here; and now, when I struggled to my feet, I found that it was queer indeed. I was almost weightless! The movement of getting upright flung me upward as though I were a tossed feather. My helmet struck the metal ceiling, so sharp a blow that I feared for an instant I had smashed the helmet. It could have been disastrous, for whether air was here or not with breathable pressure I had no idea.

From the ceiling, with flailing arms and legs, I sank back to the floor-grid; and in a moment I was able to stand upright with so slight a feeling of weight that I could have been a bit of thistle ready to blow away in the least wind. Unquestionably, the interior gravity force being maintained in the enemy ship was comparable to that found on the Planet Wandl.

There was, as I stood there balancing myself in the dimness of the pressure-room, a queer feeling of triumph in me. A triumphant hope; for, coming down into the ship's capacious funnel—larger than it had seemed from a distance—I had seen what appeared to be a small projectile, resting in some strange landing gear. The disc bearing me had settled upon a stage alongside it. Was that the projectile from Earth? Were Anita and Venza here aboard this ship? And Snap—was he here?

A growing air pressure was around me; the tiny Erentz dials

within my helmet had been immovable, but now they were showing outside pressure. I stood waiting. Whatever sounds were here I could not tell. Then presently the dials stopped. They registered seventeen pounds — whatever that might mean here. I loosed the helmet and took it off.

With the first gasping breath my senses reeled. I sank to the floor, and though I tried to replace the helmet, it was too late. My thoughts were fading. A strange chemical odor was in my nostrils. Or was it perfume? Stabs of pain were like fire in my lungs. . . . This was not air! Something else; something heavy and ponderably fluid. I tried to stop breathing, but could not. I was sucking it in; blowing it out with gasping exhalations. It was like breathing a thin perfumed water.

The drifting away was pleasant.

TORTURED dreams came with my awakening. I found myself in the same dim room, upon the floor. I could breathe better now. There was the sense of a considerable time having passed. I was unharmed; breathing with very rapid respiration. All the muscles of my chest were tired, but beyond that I was not distressed. And in a few hours more the strangeness had almost gone.

I found now I was not injured. The rest, sleep—or perhaps this air was drugged—had refreshed me. I was ravenously hungry.

Again, gingerly as before, I stood up, and slid my space-suit from me. And now I was aware of movement and sound. The floor-grid vibrations were apparent. And there was a dim, distant, tiny throbbing; it was much like the interior of the *Cometara* while in flight.

And there were other sounds, indescribably faint, yet strangely clear. I thought they might be distant voices.

I took a cautious step. I could see a dim blank wall nearby, with what seemed a bowl-like article of furniture on the floor against the wall. For all my caution, I sailed upward. But this time I held my balance. And I found that with my negligible weight, I could almost swim in this strange air! I hit the wall and slid slowly down it to the floor again, like a man sinking to the bottom of a tank.

It was a strange exploration I now made of this small triangular room! The light was inherent to the metal of the walls, as though they were glowing from electronified current. But they were cool and sleek to my touch. I swam and bumped about like a clumsy, floundering fish in a tank. It was sometimes difficult to tell up from down —the floor-grid from the ceiling— save that when I ceased my efforts I sank gently to the bottom.

There seemed no way out of this place. Certainly there was no window. Ventilation was here; I could feel and smell fresh streams of air coming through tiny vents. But the slide-porte through which I had fallen, I could not now find.

The vessel was in motion; but headed where? To Wandl, I was convinced. And my captors were content to leave me here; that seemed obvious. It suddenly occurred to me to put my ear against the wall. At once all the sounds became incredibly louder. It was a confusion of sound; the mechanisms of the vessel, some of which I thought I could identify and some not; the strange swish and thump of what might have been people moving; and there were voices.

THE voices seemed a mingled babble, coming from everywhere. The timber of the sound was very strange. It held no suggestion of how far away from me

the voices might be. There were so many of them I could only think they were scattered about the ship; and yet they all seemed together. After a moment the blend was less confusing. Again, very strangely my hearing seemed able to separate one from the other.* I heard a strange tongue: two types of voices; slow, measured, carefully intoned phrases, and voices of a curiously sepulchral, hollow sound. My mind went back to the Red Spark restaurant room. Were these slow, commanding voices from the brains—the Masters? And these empty, hollow tones—were they from beings similar to that ten-foot shrouded shape which had carried the brain in the black box?

And suddenly I realized that amid the babble I was hearing English? A man's voice, talking English. I caught, very clearly, the phrase:

"Master, yes. She means well. Can you not see it?"

Molo's voice! I could not miss it! Then the girls must be here also!

Another voice:

"I am not sure. Perhaps. The Great Intelligence will talk with her when we are arrived." It was the slow, measured voice of one of the brains!

"When will that be? Pretty soon now, won't it, Molo?"

Venza! A great wave of thankfulness swept me. Venza here! And then I heard Anita.

"Your two captives, where are they? You're not going to kill them, are you?"

I had not realized the weight of hopelessness upon me until now that it was lifted. Anita here! Not dead, but here, alive!

"No," said Molo. "Perhaps not. The new one nobody has inspected as yet. The other is being cared for. The Great Intelligence will question him when we arrive."

"We are arriving," said Venza. "That's your world down there, isn't it?"

"Yes. We are dropping fast."

The voice of the brain: "Come, Wyk. The instruments are showing events on our captured worlds. Take me to watch. I am tired of movement."

"Yes, Master."

IT seemed that the brain was being carried away, and that Molo and the two girls were left alone. I had thought at first that they were in the adjacent room to me—somewhere nearby. But then it seemed not; they could have been far distant on the ship. They had mentioned two captives. One, obviously, was myself. Was the other Snap?

"Come," Molo was saying, "stand here with me and we will watch this world. Not mine, Venza *chia*, as you just called it. But my adopted world. And it will be yours—until we rule the new Mars."

I heard them moving to gaze through the window-porte. And then came Anita's voice:

"If it's anything like this ship, it will be very strange."

"Strange indeed, little dove. I was there only once—a month ago—and for a few hours only. The

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* The atmosphere handled sound vibrations differently from that of Earth. Voices had a muffled tone, as though they were smothered. There was undoubtedly a vibrational distortion; and a sound-wave speed slower than Earth's normal-pressure rate of 1,050 feet a second—perhaps as slow as 700. Yet—and the reason is obscure—sounds remained audible over longer distances than on Earth.

In this instance now, as I listened with my ear to the wall of the ship, I was hearing all its sounds picked up and carried by the metal. All the metal structure of the vessel was electronified, undoubtedly, for the working of whatever pressure-system it was using. And these walls handled the sounds as I have described.

Great Intelligence, as they call him, talked to me, absorbing my knowledge; they call it that. And he was much impressed by me, and made very wonderful promises in exchange for my fidelity. And for my sister, too."*

"You will rule Mars?" Venza was saying. "When this is over, you mean you will really be given Mars to rule?"

That same, child-like voice! Both the girls were acting; all this time they had been wedging their way into the confidence of their captors.

"I would rather live on the Earth," said Anita. "There was a young man there—"

"He will not be there much longer," Molo laughed. "You are very lucky that I fancy you!"

"Lucky indeed," Venza echoed. "No death for me. I'm too young."

"But all those millions—dead. It seems so terrible."

"It is, for them!" Molo was in a high humor, pleased with himself and with these girls. "See down there; that blurring is the heavy air. We're almost down into it now."

I HEARD the sound of someone joining them. And then the hollow voice again:

"Molo! Bad tidings come from your accursed world of Mars. One of the Masters was captured there in Ferrok-Shahn. They tortured him as they did the one on Earth. But he did not die unyielding. He spoke, and told our plans!"

"Hah! Did I not advise you to keep those helpless things on Wandl?"

"But it is done now. The worlds know our purpose. They are preparing space-ships. Already some are rising from Ferrok-Shahn, from Grebbar and from Great-New York."

"Let them. We knew they were doing that."

"But now they know our purpose. The Master Intelligence fears that they will come raiding Wandl. Our vessels are being made ready to go out and repel them."

The hollow voice ceased.

"Your purpose discovered?" said Anita. "What does that mean? Won't you tell us now? Twin queens for your future Mars—and you treat us like children!"

"That light-beam he so cleverly planted in Great-New York—" Venza hinted.

"Yes, I will tell you! Without me in Great-New York and my men who went with these Wandlites to Ferrok-Shahn and Grebbar, the vital gravity beams could never successfully have been planted. The apparatus was complicated; you saw it. You saw the labor I had making the contact?"

"But what are the light-beams for?" Anita insisted.

I LISTENED, breathless, as he told them. Strange, diabolical plot! The electronic beam planted in Great-New York could not be destroyed. A disintegration of the rock atoms had been set up. With each rotation of the Earth it was sweeping the sky. And Wandl, from a great control station, was flinging attraction gravity upon that beam, using it as a monstrous lever to stop the rotation of the Earth! With every daily passage now the force was being exerted.

* During this, and upon other, subsequent occasions, how Molo and Meka became identified with the Wandlites was obvious. He was an interplanetary pirate—the Gray Star-Streak. Operating from an obscure Martian Polar base, Molo and his ship had been raiding the interplanetary voyage-lanes. Wandl, coming upon a diabolical mission against Mars, Earth and Venus, had sent three advance ships. One had encountered Molo and captured him and his bandit crew. And, all of them outlaws, wanted by the governments of all the civilized worlds, the pirates, such of them who remained alive after the capture of their vessel, promptly joined the Wandlites.

The rotation was slowing. In a few days it would stop, with the end of the beam drawn to Wandl and held there.

And the beams from Grebbar and Ferrok-Shahn were the same. Three giant chains! Our three worlds held by chains to this diabolical invading planet! Then Wandl, traveling of its own gravitational volition—by what strange science I later caught glimpses; but no one has ever clearly understood—would withdraw from our solar system! The gravitational chains would pull the Earth, Venus and Mars after it!

Titanic tow-ropes! The destruction, not of our worlds, but of all life upon them! I could envisage that coming of universal death. The storms, earthquakes, tidal waves, volcanic disturbances as the axis changed and the rotation ceased. Then lasting night upon one hemisphere, and steady blazing day upon the other. The mad sweep of changing climates. . . .

Then the towing outward. Our Sun dwindling; warmth gone. The coldness of interstellar space destroying every living organism. Three dead worlds; Wandl would draw them to her own Sun and then free them—send them, with new orbits, around that distant blazing star. Three new worlds brought home triumphantly by Wandl to join the little family of inhabited planets revolving around this other Sun. Three fair and lovely worlds, warmed back by the other sunlight to be green mansions untenanted, ready to receive the new beings who would come and possess them!

(To be continued.)

Einstein on the Unified Field Theory

DR. ALBERT EINSTEIN recently presented to a class of distinguished physicists and mathematicians his latest and greatest work, the unified field theory.

Theoretical physicists proclaimed it as the simplest theory that will explain all the secrets of space and the universe. Mathematicians find it the most gigantic problem ever presented to them. It embraces and goes beyond the general theory of relativity, for it places electro-magnetism side by side with the propagation of light, gravitation and quantum mechanics under one general law of unity.

His face wreathed with smiles, the benign little German professor explained that he sought to write in the most simple complete equation one basic law explaining the universe and its properties. To his amazement, he said, when he had completed the theory he found it contained the laws of his old gravitational theory combined in harmony with Maxwell's laws of electro-magnetism.

The thirty listeners in the little classroom included Richard Chase Tolman, physicist, mathematician, who holds to the theory the world is running down, Dr. Paul S. Epstein, theoretical physicist, and Dr. E. T. Bell, mathematician.

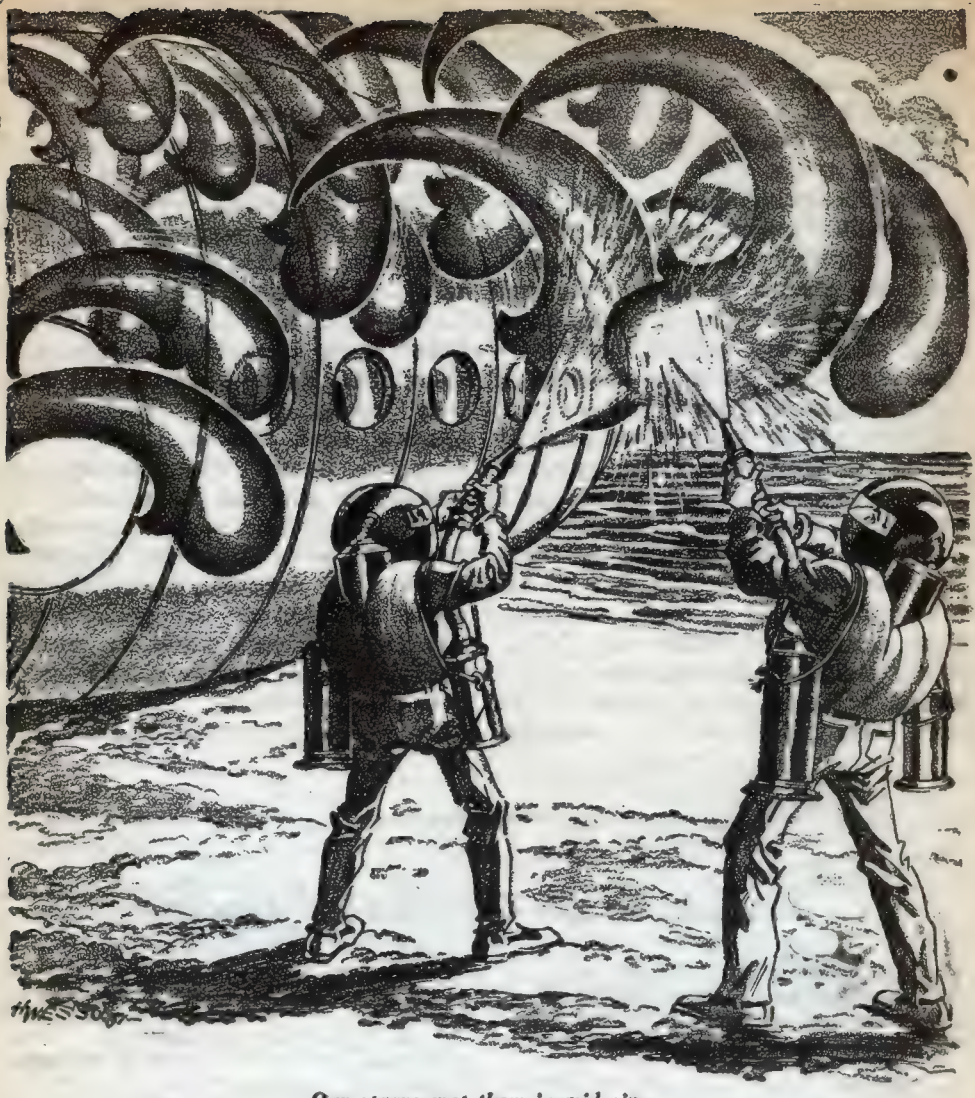
Talking in German an hour and a half, Einstein demonstrated on the blackboard in the international shorthand language of higher mathematics string after string of equations that finally evolved one little group which brought forth gasps of astonishment.

The equation for the theory of relativity contained ten unknown quantities, four of which had to be assumed. This greater puzzle contains sixteen unknown quantities with four to be assumed.

Experimental proof of his unified field theory is already at hand, he revealed, in its application to laboratory results with weak electro-magnetic and gravitational fields. More work remains to be done experimentally with stronger fields in those lines. Some work on terrestrial magnetism remains to be done.

He explained the unified field theory as a conception for a new geometry for space that mathematicians must bring into reality. Constants in this geometry will be the speed of light, charge of the electron, mass of the electron, mass of the proton and Planck's law on photo electric constants.

When mathematicians work out the formulas and they are applied he predicts that many laboratory mysteries will be explained.



Our sprays met them in mid air.

Vampires of Space

By Sewell Peaslee Wright

SOMETIMES, I know, I must seem a crotchety old man. "Old John Hanson," they call me, and roll their eyes as though to say, "Of course, you have to forgive him on account of his age."

But the joke isn't always on me. Not infrequently I gain much amusement observing these cocky youngsters who strut in the blue-and-silver uniforms of the Service in which, until more or less recently, I bore the rank of Commander.

Commander John Hanson recounts his harrowing adventure with the Electites of space.

There is young Clippen, for instance, a nice, clean youngster; third officer, I be-

lieve, on the *Caliobre*, one of the newest ships of the Special Patrol Service. He drops in to see me as often as he has leave here at Base, to give me the latest news, and to coax a yarn, if he can, of the old days. He is courteous, respectful . . . and yet just a shade condescending. The condescension of youth.

"Something new under the sun after all, sir," he commented the other day. That, incidentally, is a saying of Earth, whence the larger part of the Service's officer personnel has always been drawn. Something new under the sun! The saying probably dates back to an age long before man mastered space.

"Yes?" I leaned back more comfortably, happy, as always, to hear my native Earth tongue, and to speak it. The Universal language has its obvious advantages, but the speech of one's fathers wings thought straightest to the mind. "What now?"

"Creatures of space!" announced Clippen importantly, in the fashion of one who brings surprising news. "'Electites,' they call them. Beings who live in space—things, anyway; I don't know that you could call them beings."

"HM-M." I looked past him, down a mighty corridor of dimming years. Creatures that lived in space. . . . I smiled in my beard. "Creatures perhaps twice the height of a man in their greatest dimension? In shape like a crescent, with blunted horns somewhat straightened near the tips, and drawn close together?" I spoke slowly, drawing from my store of memories. "A pale red in color, intangible and yet—"

"You've heard, sir!" said Clippen disappointedly to me. "My news is stale."

"Yes, I've heard," I nodded. "'Electites,' they call them, eh? That's the work of our great scientific minds, I presume?"

"Er—yes. Undoubtedly." Clippen started to wander restlessly around the room. He had a great respect for the laboratory men, with their white coats and their wise, solemn airs, and he disliked exceedingly to have me present my views regarding these much overrated gentlemen. I have always been a man of action, and pottering over coils and glass vials and pages of figures has always struck me as something not to be included in a man's proper sphere of activity. "Well, I believe I'll be shoving off, sir; just dropped in for a moment," Clippen continued. "Thought perhaps you hadn't heard of the news; it seems to be causing a great deal of discussion among the officers at Base."

"Something new under the sun, eh?" I chuckled.

"Why, yes. You'll agree to that, sir, surely?" I believe the lad was slightly nettled by my chuckle. No one likes to bear stale news.

"I'll agree to that," I said, smiling broadly now. "'Tis easier than debating the matter, and an old man can't hope to hold his own in argument with you quick-witted youngsters."

"I've never noticed," replied young Clippen rather acidly, "that you were particularly averse to argument, sir. Rather the reverse. But I must be moving on; we're shoving off soon, I hear, and you know the routine here at Base."

HE saluted me, rather carelessly, I should say, and I returned the salute with the crispness with which the gesture was rendered in my day. When he was gone, I turned to my desk and began searching in that huge and capacious drawer in which were kept, helter-skelter, the dusty, faded, nondescript mementoes of a thousand adventures.

I found, at last, what I was seeking. No impressive thing, this: a bit of metal, irregular in shape, no larger than my palm, and three times the thickness. One side was smooth; the other was stained as by great heat, and deeply pitted as though it had been steeped in acid.

Silently, I turned the bit of metal over and over in my hands. I had begged hard for this souvenir; had obtained it only by passing my word its secret would never reach the Universe through me. But now . . . now that seal of secrecy has been removed.

As I write this, slowly and thoughtfully, as an old man writes, relishing his words for the sake of the memories they bring before his eyes, a bit of metal holds against the vagrant breeze the filled pages of my script. A bit of metal, no larger than my palm, and perhaps three times the thickness. It is irregular in shape, and smooth on one side. The other side is eroded as though by acid.

Not an imposing thing, this ancient bit of metal, but to me one of my most precious possessions. It is, beyond doubt, the only fragment of my old ship, the *Ertak*, now in existence and identifiable.

And this story is the story of that pitted metal and the ship from which it came; one of the strangest stories in all my storehouse of memories of days when only the highways of the Universe had been charted, and breathless adventure awaited him who dared the unknown trails of the Special Patrol Service.

THE *Ertak*, as I recall the details now, had just touched at Base upon the completion of a routine patrol—one of those monotonous, fruitless affairs which used to prey so upon Correy's peace of mind. Correy was my first officer on the *Ertak*, and the keenest seeker after trouble I have ever known.

"The Chief presents his compliments and requests an immediate audience with Commander Hanson," announced one of the brisk little attaches of Base, before I'd had time to draw a second breath of fresh air.

I glanced at Correy, who was beside me, and winked. That is, I quickly drew down the lid of one eye—a peculiar little gesture common to Earth, which may mean any one of many things.

"Sounds like something's in the wind," I commented in a swift aside. "Better give no leaves until I come back."

"Right, sir!" chuckled Correy. "It's about time."

I made my way swiftly to the Chief's private office, and was promptly admitted. He returned my salute crisply, and wasted no time in getting to the point.

"How's your ship, Commander? Good condition?"

"Prime, sir."

"Supplies?"

"What's needed could be taken on in two hours." In the Service, Earth time was an almost universal standard except in official documents.

"Good!" The Chief picked up a sheaf of papers, mostly standard charts and position reports, I judged, and frowned at them thoughtfully. "I've some work cut out for you, Commander.

"Two passenger ships have recently been reported lost in space. That wouldn't be so alarming if both had not, when last reported, been in about the same position. Perhaps it is no more than a coincidence, but, with space travel still viewed with a certain doubt by so many, the Council feels something should be done to determine the cause of these two losses.

"Accordingly, all ships have been

rerouted to avoid the area in which it is presumed these losses took place. The locations of the two ships, together with their routes and last reported positions, are given here. There will be no formal orders; you are to cruise until you have determined, and if possible, eliminated the danger, or until you are certain that no further danger exists."

HE slid the papers across his desk, and I picked them up.

"Yes, sir!" I said. "That will be all?"

"You understand your orders?"

"Yes, sir!"

"Very well. Good luck, Commander!"

I saluted and hurried out of the room, back to my impatient first officer.

"What's up, sir?" he asked eagerly.

"Can't say that I know, to be truthful about it. Perhaps nothing; perhaps a great deal. Give orders to take on all necessary supplies—in double-quick time. I've promised the Chief we'll be ready to shove off in two hours. I'll meet you in the navigating room, and give you all the information I have."

Correy saluted and rushed away to give the necessary orders. Thoughtfully, I made my way through the narrow, ethon-lighted passageways to the navigating room, where Correy very shortly joined me.

Briefly, I repeated the Chief's conversation, and we both bent over the charts and position reports.

"Hm-m!" Correy was lost in thought for a moment as he fixed the location in his mind. "Rather on the fringe of things. Almost anything could happen out there, sir. That would be on the old Belgrade route, would it not?"

"Yes. It's still used, however, as you know, by some of the smaller, slower ships making many stops. Or was, until the recent order. Any guesses as to what we'll find?"

"None, sir, except the obvious one."

"Meteorites?"

Correy nodded.

"There's some bad swarms, now and then," he said seriously. I knew he was thinking of one disastrous experience the *Ertak* had had . . . and of scores of narrow escapes. "That would be the one likely explanation."

"True. But those ships were old and slow, they could turn about and dodge more easily than a ship of the *Ertak's* speed. At full space speed we're practically helpless; can neither stop nor change our course in time to avoid an emergency."

"We'll, sir," shrugged Corey, "our job's to find the facts. I took the liberty of telling the men we were to be ready in an hour and a half. If we are, do we shove off immediately?"

"Just as soon as everything's checked. I leave it to you to give the necessary orders. I know I can depend upon you to waste no time."

"Right, sir," said Correy, grinning like a schoolboy. "We'll waste no time."

In just a shade less than two hours after we had set down at Base, we were rising swiftly at maximum atmospheric speed, on our way to a little-traveled portion of the universe, where two ships, in rapid succession, had met an unknown fate.

"I WONDER, sir, if you could come to the navigating room at once?" It was Kincaide's voice, coming from the instrument in my stateroom.

"Immediately, Mr. Kincaide." I asked no questions, for I knew my second officer's cool-headed disposition. If something required my

attention in the navigating room, in his opinion, it was something important. I threw on my uniform hurriedly and hastened to Kincaide's side, wondering if at last our days of unrewarded searching were to bear fruit.

"Perhaps I called you needlessly, sir," Kincaide greeted me apologetically, "but, considering the nature of our mission, I thought it best to have your opinion." He motioned toward the two great navigating charts, operated by super-radio reflexes, set in the surface of the table before him.

In the center of each was the familiar red spark which represented the *Ertak* herself, and all around were the glowing points of greenish light which gave us, in terrestial terms, the locations of the various bodies to the right and left, above and below.

"See here, sir—and here?" Kincaide's blunt, capable forefingers indicated spots on each of the charts. "Ever see anything like that before?"

I shook my head slowly. I had seen instantly the phenomena he had pointed out. Using again the most understandable terminology, to our right, and somewhat above us, nearer by far than any of the charted bodies, was something which registered on our charts as a dim and formless haze of pinkish light.

"Now the television, sir," said Kincaide gravely.

I BENT over the huge, hooded disk, so unlike the brilliantly illuminated instruments of to-day, and studied the scene reflected there.

Centered in the field was a group of thousands of strange things, moving swiftly toward the ship. In shape they were not unlike crescents, with the horns blunted, and pushed inward, towards each other. They glowed with a reddish radiance which seemed to have its center in the thickest portion of the crescents—and, despite their appearance, they gave me, somehow, an uncanny impression that they were in some strange way, *alive!* While they remained in a more or less compact group, their relative positions changed from time to time, not aimlessly as would insensate bodies drifting thus through the black void of space, but with a sort of intelligent direction.

"What do you make of them, sir?" asked Kincaide, his eyes on my face. "Can you place them?"

"No," I admitted, still staring with a fixed fascination at the strange scene in the television disk. "Perhaps this is what we've been searching for. Please call Mr. Correy and Mr. Hendricks, and ask them to report here immediately."

Kincaide hastened to obey the order, while I watched the strange things in the field of the television disk, trying to ascertain their nature. They were not solid bodies, for even as I viewed them, one was superimposed upon another, and I could see the second quite distinctly through the substance of the first. Nor were they rigid, for now and again one of the crescent arms would move searchingly, almost like a thick, clumsy tentacle. There was something restless, *hungry*, in the movement of the sharp arms of the things, that sent a chill trickling down my spine.

Correy and Hendricks arrived together, their curiosity evident.

"I believe, gentlemen," I said, "that we're about to find out the reason why two ships already have disappeared in this vicinity. Look first at the charts, and then here."

THEY bent, for a moment, over the charts, and then stared down into the television disk. Correy was first to speak.

"What are they?" he gasped. "Are they . . . alive?"

"That is what we don't know. I believe they are, after a fashion. And, if you'll observe, they are headed directly towards us at a speed which must be at least as great as our own. Is that correct, Mr. Kincaide?"

Kincaide nodded, and began some hasty figuring, taking his readings from the finely ruled lines which divided the charts into little measured squares, and checking speeds with the chronometers set into the wall of the room.

"But I don't understand the way in which they register on our navigating charts, sir," said Hendricks slowly. Hendricks, my youthful third officer, had an inquiring, almost scientific mind. I have often said he was the closest approach to a scientist I have ever seen in the person of an action-loving man. "They're a blur of light on the charts—all out of proportion to their actual size. They must be something more than material bodies, or less."

"They're coming towards us," commented Correy grimly, still bent over the disk, "as though they knew what they were doing, and meant business."

"Yes," nodded Kincaide, picking up the paper upon which he had been figuring. "This is just a rule-of-thumb estimate, but if they continue on their present course at their present speed, and we do likewise, they'll be upon us in about an hour and a quarter—less, if anything."

"BUT I can't understand their appearance in the charts," muttered Hendricks doggedly, still turning that matter over in his mind. "Unless . . . unless . . . ah! I'll venture I have it, sir! The charts are operated by super-radio reflexes; in others words, electrically. They would naturally be extremely sensitive to an electrical disturbance. Those things are electrical in nature. Highly so. That's the reason for the flare of light on the charts."

"Sounds logical," said Correy immediately. "The point, as I see it, is not what they are, but what we're to do about them. Do you believe, sir, that they are dangerous?"

"Let me ask you some questions to answer that one," I suggested. "Two ships are reported lost in space—in this immediate vicinity. We come here to determine the cause of those losses. We find ourselves the evident objective of a horde of strange things which we cannot identify; which Mr. Hendricks, here, seems to have good reason to believe are somehow electrical in nature. Putting all these facts together, what is the most logical conclusion?"

"That these things caused the two lost ships to be reported missing in space!" said Hendricks.

I GLANCED at Kincaide, and he nodded gravely.

"And you, Mr. Correy?" I asked.

Correy shrugged.

"I believe you're right, sir. They seem like such rather flimsy, harmless things, though, that the disintegrator rays will take care of without difficulty. Shall I order the ray operators to their stations, sir?"

"Do that, please. And take personal charge of the forward projectors, will you? Mr. Hendricks, will you command the after projectors? Mr. Kincaide and I will carry on here."

"Shall we open upon them at will, or upon orders, sir?" asked Correy.

"Upon orders," I said. "And you'll get your orders as soon as they're in range; I have a feeling we're in for trouble."

"I hope so, sir!" grinned Correy from the door.

Hendricks followed him silently, but I saw there was a deep, thoughtful frown between his brows.

"I think," commented Kincaide quietly, "that Hendricks is likely to be more useful to us in this matter than Correy."

I nodded, and bent over the television disk. The things were perceptibly nearer; the hurtling group nearly filled the disk, now.

There was something horribly eager, horribly malignant, in the way they shone, so palely red, and in the fashion in which their blunt tentacles reached out toward the *Ertak*.

I glanced up at the Earth clock on the wall.

"The next hour," I said soberly, "cannot pass too quickly for me!"

WE had decelerated steadily during the hour, but we were still above maximum atmospheric speed when at last I gave the order to open the invaders with disintegrator rays. They were close, but of course the rays are not as effective in space as when operating in a more favorable medium, and I wished to make sure of our prey.

I pressed the attention signal to Correy's post, and he answered instantly.

"Ready, Mr. Correy?"

"Ready, sir!"

"Then commence action!"

Before I could repeat the command to Hendricks, I heard the deepening note of the atomic generators, and knew Correy had already begun operations.

Together, and silently, Kincaide and I bent over the television disk. We watched for a moment, and then, with one accord, lifted our heads and looked into each other's eyes.

"No go, sir," said Kincaide quietly.

I nodded. It was evident the disintegrator rays were useless here. When they struck into the horde of crescent-shaped things coming so hungrily toward us, the things changed from red to a sickly, yellowish pink, and seemed to writhe, as though in some discomfort, but that was all.

"Perhaps at closer range. . . .?" ventured Kincaide.

"I think not. If Mr. Hendricks is correct—and I believe he is—these things aren't material; they're not matter, as we comprehend the word. And so, they can't be disintegrated."

"Then, sir, how are we to best them?"

"First, we'll have to know more about them. For one thing, their mode of attack. We should know very soon. Please recall Mr. Hendricks, and then order all hands to their posts. We may be in for it."

HENDRICKS came rushing in breathlessly.

"The rays are useless, sir," he said. "They'll be on us in a few minutes. Any further orders?"

"Not yet. Have you any ideas as to their mode of attack? What they can do to us?"

"No, sir. That is, no reasonable idea."

"What's your unreasonable theory, then, Mr. Hendricks?"

"I'd prefer, sir, to make further observation first," he replied. "They're close enough now, I think, to watch through the ports. Have I your permission to unshutter one of the ports?"

"Certainly, sir." The *Ertak*, like all Special Patrol ships of the period, had but few ports, and these were kept heavily shuttered. Her hull was double; she was really two ships, one inside the other, the two skins being separated and braced by innumerable trusses. Be-

tween the outer and the inner skin the air pressure was kept about one half of normal, thus distributing the strain of the pressure equally between the two hulls.

In order to arrange for a port or an exit, it was necessary to bring these two skins close together at the desired point, and strengthen this weak point with many braces. As a further protection against an emergency—and a fighting ship must be prepared against all emergencies—the ports were all shuttered with massive doors of solid metal, hermetically fitted. I am explaining this so much in detail for the benefit of those not familiar with the ships of my day, and because this information is necessary that one may have a complete understanding of subsequent events.

Hendricks, upon receiving my permission, sprang to one of the two ports in the navigating room and unshuttered it.

"The lights, please?" he asked, over his shoulder. Kincaide nodded, and switched off the *ethon* tubes which illuminated the room. The three of us crowded around the recessed port.

THE things were not only close; they were veritably upon us! Even as we looked, one of them swept by the port so close that, save for the thick crystal, one might have reached out into space and touched it.

The television disk had represented them very accurately. They were, in their greatest dimension, perhaps twice the height of a man, and at close range their reddish color was more brilliant than I had imagined; in the thickest portion of the crescent, which seemed to be the nucleus, the radiance of the thing was almost blinding.

It was obvious that they were not material bodies. There were no definite boundaries to their bodies; they faded off into nothingness in a sort of fringe, almost like a dim halo.

An attention signal sounded sharply, and Kincaide groped his way swiftly to answer it.

"It's Correy, sir," he said. "He reports his rays are utterly useless, and asks for further orders."

"Tell him to cease action, and report here immediately." I turned to Hendricks, staring out the port beside me. "Well, what do you make of them now?"

Before he could reply, Kincaide called out sharply.

"Come here, sir! The charts are out of commission. We've gone blind."

It was true. The charts were no more than twin rectangles of lambent red flame, with a yellow spark glowing dimly in the center of each, the fine black lines ruled in the surface showing clearly against the wavering red fire.

"Mr. Hendricks!" I snapped. "Let's have your theory—reasonable or otherwise."

HENDRICKS, his face pressed at an angle against one side of the port, turned toward me, and swung the shutter into place. Kincaide snapped on the lights.

"It's no longer a theory, sir," he said in a choked, hushed voice, "although it's still unreasonable. These things—are *eating* us!"

"Eating us?" Correy's voice joined Kincaide's and mine in the exclamation of amazement. He had just entered the navigating room in response to my order.

"Eroding us, absorbing us—whatever you want to call it. There's one at work close enough to the port so that I could see it. It is feeding upon our hull as an electric arc feeds upon its electrodes!"

"Farewell *Ertak!*" said Correy grimly. "Anything the rays can't lick—wins!"

"Not yet!" I contradicted him. "Kincaide, what's the nearest body upon which we can set down?"

"N-127, sir," he replied promptly. "Just logged her a few minutes ago." He poured hastily through a dog-eared index. "Here it is: 'N-127, atmosphere unbreathable; largely nitrogen, oxygen insufficient to support human life; no animal life reported; insects, large but reported non-poisonous; vegetation heroic in size, probably with edible fruits, although reports are incomplete on this score; water unfit for drinking purpose unless distilled; land area approximately—'"

"That's enough," I interrupted. "Mr. Correy, set a course for N-127 by the readings of the television instrument. Mr. Kincaide, accelerate to maximum space speed, and set us down on dry land as quickly as emergency speed can put us there. And you, Mr. Hendricks, please tell us all you know—or guess—about the enemy."

HENDRICKS waited, moodily silent, until the ship was coming around on her course, picking up speed every instant. Kincaide had gradually increased the pull of the gravity pads to about twice normal, so that we found it barely possible to move about. The *Ertak* was an old-timer, but she could pick up speed when she had to that would have thrown us all headlong were it not for the artificial gravity anchorage of the pads.

"It's all guess-work," began Hendricks slowly, "so I hope you won't place too much reliance in my theories, sir. I'll just give you my line of reasoning, and you can evaluate it for yourself.

"These things are creatures of space. No form of life, as we know it, can live in space. Therefore, they are not material; they are not matter, like ourselves.

"From their effect upon the charts, we decided they were electrical in nature. Not made up of atoms and electrons, but of pure electrical energy in an unfamiliar form.

"Then, remembering that they exist in space, and concluding that they were the destroyers of the two ships we know of, I began wondering how they brought about the destruction—or at least, the disappearance—of these two ships. Life of any kind must have something to feed upon. To produce one kind of energy we must convert, apparently consume, some other kind of energy. Even our atomic generators slowly but surely eat up the metal in which is locked the power which makes this ship's power possible.

"But, in space, what could these things feed upon? What—if not those troublesome bodies, meteorites? And meteorites, as we know, are largely metallic in composition. And ships are made of metal.

"Here are the only proofs, if proofs you can call them, that these are not wild ideas: first, the disintegrator rays, working upon an electrical principle, reacted upon but did not destroy these things, as might be expected from the meeting of two not dissimilar manifestations of energy; and the fact that I did, from the port, see one of these space-things, or part of one, flattened out upon the body of the *Ertak*, and feeding upon her skin, already roughened and pitted slightly from the thing's hungry activities."

HENDRICKS fell silent, staring down at the floor. He was only a youngster, and the significance of his remarks was as plain to him as it was to the rest of us. If these monsters from the void were truly feeding on the skin of our ship, vampire-like, it would not be long before it would be

weakened; weakened to the danger point, weakened until we would explode in space like a gigantic bomb, to leave our fragments to whirl onward forever through the darkness and the silence of outer space.

"And what, sir, do you plan to do when we reach this N-127?" asked Correy. "Burn them off with a run through the atmosphere?"

"No; that wouldn't work, I imagine." I glanced at Hendricks inquiringly, and he shook his head. "My only thought was to land, so that we would have some chance. Outside the ship we can at least attack; locked in here we're helpless."

"Attack, sir? With what?" asked Kincaide curiously.

"That I can't answer. But at least we can fight—with solid ground under our feet. And that's something."

"You're right, sir!" grinned Correy. It was the first smile that had appeared on the faces of any of us in many minutes. "And fight we will! And if we lose the ship, at least we'll be alive, with a hope of rescue."

Hendricks glanced up at him and shook his head, smiling crookedly.

"You forget," he remarked, "that there's no air to breathe on N-127. An atmosphere of nitrogen. And no water that's drinkable—if the reports are accurate. A breathing mask will not last long, even the new types."

"That's so," said Kincaide. "The tanks hold about a ten-hours' supply; less, if the wearer is working hard, or fighting."

Ten hours! No more, if we did not find some way to destroy these leeches of space before they destroyed the *Ertak*.

DURING the next half hour little was said. We were drawing close to our tiny, uninhabited haven, and both Correy and Kincaide were busy with their navigation. Working in reverse, as it were, from the rough readings of the television disk settings, an ordinarily simple task was made extremely difficult.

I helped Correy interpret his headings, and kept a weather eye on the gauges over the operating table. We were slipping into the atmospheric fringe of N-127, and the surface-temperature gauge was slowly climbing. Hendricks sat hunched heavily in a corner, his head bowed in his hands.

"I believe," said Kincaide at length, "I can take over visually now." He unshuttered one of the ports, and peered out. N-127 was full abreast of us, and we were dropping sideways toward her at a gradually diminishing speed. The impression given us, due to the gravity pads in the keel of the ship, was that we were right side up, and N-127 was approaching us swiftly from the side.

"'Vegetation of heroic size' is right, too," said Correy, who had been examining the terrain at close range, through the medium of the television disk. "Two of the leaves on some of the weeds would make an awning for the whole ship. See any likely place to land, Kincaide?"

"Nowhere except along the shore—and then we'll have to do some nice work and lay the *Ertak* parallel to the edge of the water. The beach is narrow, but apparently the only barren portion. Will that be all right, sir?"

"Use your own judgment, but waste no time. Correy, break out the breathing masks, and order the men at the air-lock exit port to stand by. I'm going out to have a look at these things."

"May I go with you, sir?" asked Hendricks sharply.

"And I?" pleaded Kincaide and Correy in chorus.

"You, Hendricks, but not you two. The ship needs officers, you know."

"Then why not me instead of you, sir?" argued Correy. "You don't know what you're going up against."

"All the more reason I shouldn't be receiving any information second-hand," I said. "And as for Hendricks, he's the laboratory man of the *Ertak,* and these things are his particular pets. Right, Hendricks?"

"Right, sir!" said my third officer grimly.

Correy muttered under his breath, something which sounded very much like profanity, but I let it pass.

I knew just how he felt.

I HAVE never liked to wear a breathing mask. I feel shut in, frustrated, more or less helpless. The hiss of the air and the everlasting *flap-flap* of the exhaust-valve disturb me. But they are very handy things when you walk abroad on a world which has no breathable atmosphere.

You've probably seen, in the museums, the breathing masks of that period. They were very new and modern then, although they certainly appear cumbersome by comparison with the devices of today.

Our masks consisted of a huge shirt of air-tight, light material which was belted in tightly around the waist, and bloused out like an ancient balloon when inflated. The arm-holes were sealed by two heavy bands of elastic, close to the shoulders, and the head-piece was of thin copper, set with a broad, curved band of crystal which extended from one side to the other, across the front, giving the wearer a clear view of everything except that which was directly behind him. The balloon-like blouse, of course, was designed to hold a small reserve supply of air, for an emergency, should anything happen to the tank upon the shoulders, or the valve which released the air from it.

They were cumbersome, uncomfortable things, but I donned mine and adjusted the menore, built into the helmet, to full strength. I wanted to be sure I kept in communication with both Hendricks and the sentries at the air-lock exit, and of course, inside the helmets, verbal communication was impossible.

I glanced at Hendricks, and saw that he was ready and waiting. We were standing inside the air-lock, and the mighty door of the port had just finished turning in its threads, and was swinging back slowly on its massive gimbals.

"Let's go, Hendricks," I emanated. "Remember, take no chances, and keep your eyes open."

"I'll remember, sir," replied Hendricks, and together we stepped out onto the coarse gravel of the beach.

BEFORE us, waves of an unhealthy, cloudy green rolled slowly, heavily shoreward, but we had no eyes for this, nor for the amazing vegetation of the place, plainly visible on the curving shores. We took a few hurried steps away from the ship, and then turned to survey the monsters which had attacked it.

They literally covered the ship; in several places their transparent, glowing bodies overlapped. And the sides of the *Ertak,* ordinarily polished and smooth as the surface of a mirror, were dull and deeply eroded.

"Notice, sir," emanated Hendricks excitedly, "how much brighter the things are! They *are* feeding, and they are growing stronger and more brilliant. They

—look out, sir! They're attacking! Our copper helmets—"

But I had seen as quickly as he. Half a dozen of the glowing things, sensing in some way the presence of a metal which they apparently preferred to that of the *Ertak's* hull, suddenly detached themselves and came swarming directly down upon us.

I was standing closer to the ship than Hendricks, and they attacked me first. Several of them dropped upon me, their glowing bodies covering the vision-piece, and blinding me with their light. I waved my arms and started to run blindly, incoherent warnings coming to me through the menore from Hendricks and the sentries.

The things had no weight, but they emitted a strange, electric warmth which seemed to penetrate my entire body instantly as I ran unseeingly, trying to find the ship, tearing at the fastenings of my mask as I ran. I could not, of course, enter the ship with these things clinging to my garments.

Suddenly I felt water splash under my feet; felt its grateful coolness upon my legs, and with a gasp I realized I had in my confusion been running away from the ship, instead of toward it. I stopped, trying to get a grip on myself.

The belt of the breathing mask came loose, and I tore the thing from me, holding my breath and staring around wildly. The ship was only a few yards away, and Hendricks, his mask already off, was running toward me.

"BACK!" I shouted. "I'm all right now. Back!" He hesitated for an instant until I caught up with him, and then, together, we gained the safety of the air-lock. Without orders, the men swung shut the ponderous door, and Hendricks and I stood there panting, and drawing in breaths of the *Ertak's* clean, reviving air.

"That possibility was one we overlooked, sir," said Hendricks. "Let's see what's happening."

We opened the shutter of a port nearby and gazed out onto the beach we had so hurriedly deserted. There were three or four of the glowing things huddled shapelessly around our abandoned suits, and ragged holes showed in several places in the thin copper helmets. Even as we looked, they dissolved into nothingness, and after a few seconds of hesitation, the things swarmed swiftly back to the ship.

"Well," I commented, trying to keep my voice reasonably free from the feelings which gripped me, "I believe we're beaten, Hendricks. At least, we're helpless against them. Our only chance is that they'll leave us before they have eaten through the second skin; so long as we still have that, we can live . . . and perhaps be found."

"I doubt they'll leave us while there's a scrap of metal left, sir," said Hendricks slowly. "Something's brought them from their usual haunts. There's no reason why they should leave a certainty for an uncertainty. But we're not quite through trying. I saw something—have I your permission to make another try at them? Alone, sir?"

"Any chance of success, lad?" I asked, searching his eyes.

"A chance, sir," he replied, his glance never wavering. "I can be ready in a few minutes."

"Then, go ahead—on one condition: that you let me come with you."

"Very good, sir; as you wish. Have two other breathing masks ready. I'll be back very soon."

And he left me hastily, taking the steps of the companionway two at a time.

IT was nearly an hour before Hendricks returned, bringing with him two of the most amazing pieces of apparatus I have ever seen.

To make each of them, he had taken a flask of compressed air from our emergency stores, and run a flexible tube from it into a cylindrical drinking water container. Another tube, which I recognized as being a part of our fire-extinguishers, and terminating in a metal nozzle, sprouted from the water container. Both tubes were securely sealed into the mouth of the metal cylinder, and lengths of hastily-knotted rope had been bound around each contrivance so that the two heavy containers, the air flask and the small water tank could be slung from the shoulders.

"Here, sir," he said hastily, "get into a breathing mask, and put on these things as you see me do. No time to explain anything now, except this: as soon as you're outside the ship, turn the valve that opens the compressed air flask. Hold this hose, coming from the water container, in your right hand. Don't touch the metal nozzle. Use the hose just as you'd use a portable disintegrator-ray projector."

I nodded, and followed his instructions as swiftly as possible. The two containers were heavy, but I adjusted their ropes across my shoulders so that my left hand had easy access to the valve of the air flask, and the water container was under my right arm where I could have the full use of the hose.

"Let me go first, sir," breathed Hendricks as we stood again in the air-lock, and the door turned out of its threaded seat and swung open. "Keep your eyes on me, and do as I do!"

HE ran heavily out of the ship, his burdens lurching. I saw him turn the pet-cock of the air flask, and I did likewise. A fine, powerful spray shot from the nozzle of the tube in my right hand, and I whirled around to face the ship.

Several of the things were detaching themselves from the ship, and instinctively, I turned the spray upon them. Hendricks, I could see out of the corner of my eye, did likewise. And now a most amazing thing happened.

The spray seemed to dissolve the crescent-shaped creatures; where it hit, ragged holes appeared. A terrible hissing, crackling sound came to my ears, even through the muffling mask I wore.

"It works! It works!" Hendricks was crying over and over, hardly aware, in his excitement, that he was wearing a menore. "We're saved!"

I put down three of the things in as many seconds. The central nucleus, in the thickest portion of the crescent, was always the last to go, and it seemed to explode in a little shower of crackling sparks. Hendricks accounted for four in the same length of time.

"Keep back, sir!" he ordered in a sort of happy delirium. "Let them come to us! We'll get them as they come. And they'll come, all right! Look at them! Look at them! Quick, sir!"

The things showed no fear, no intelligence. But one by one they sensed the nearness of the copper helmets we wore, and detached themselves from the ship. They moved like red tongues of flame upon the fat sides of the *Ertak;* crawling, uneasy flames, releasing themselves swiftly, one after the other.

OUR sprays met them in mid-air, and they dissolved like mist, one after the other. . . . I directed my death-dealing spray with a grim delight, and as each

glowing heart crackled and exploded, I chuckled to myself.

The sweat was running down my face; I was shaking with excitement. One side of the ship was already cleared of the things; they were slipping over the top now, one or two at a time, and as rapidly as they came, we wiped them out.

At last there came a period in which there were none of the things in sight; none coming over the top of the sorely tried ship.

"Stay here and watch, Hendricks," I ordered. "I'll look on the other side. I believe we've got them all!"

I hurried, as best I could, around to the other side of the *Ertak*. Her hull was pitted and corroded, but there was no other evidence of the crescent-shaped things which had so nearly brought about the ship's untimely, ghastly end.

"Hendricks!" I emanated happily. "'Nothing Less Than Complete Success!' And that's ours right now! They're gone—all of them!"

I slipped the contrivances from my shoulders and ran back to the other side of the ship. Hendricks was executing some weird sort of dance, patting the containers, swinging them wildly about his body, with an understandable fondness.

"Come inside, you idiot," I suggested, "and tell us how you did it. And see how it feels to be a hero!"

"IT was just luck," Hendricks tried to make us believe, a few minutes later, when Kincaide, Correy, and myself were through slapping his back and shaking his hands. "When you, sir, splashed into the water, I had just torn off my mask. I saw some of the water fall on one of the things clustered upon your helmet, and I distinctly heard it hiss, as it fell. And where it fell, it made a ragged hole, which very slowly closed up, leaving a dim spot in the tentacle where the hole had been. As I figure it, the water—to put it crudely—short-circuited the electrical energy of the things. That, too, is just a guess, but I think it's a good one.

"Of course, it was a long chance, but it seemed like our only one. There was nothing more or less than acidulated water in the containers; and the air flasks, of course, were merely to supply the pressure to throw the water out in a powerful spray. It happened to work, and there isn't anybody any happier about it than I am. I'm young, and there're lots of things I want to do before I bleach my bones on a little deserted world like this, that isn't important enough to even have a name!"

That was typical of Hendricks. He was a practical scientist, willing and eager to try out his own devices. A man of action first—as a man should be.

NONE of us, I think, spent a really easy moment until the *Ertak* was back at Base. Our outer hull was weakened by at least half, and we were obliged to increase the degree of vacuum there and thus place the major portion of the load on the inner skin. It was a ticklish business, but those old ships were solidly built, and we made it.

As soon as I had completed my report to the Chief, the *Ertak* was sent instantly to a secret field, under heavy guard, and a new outer hull put in place.

"This can't be made public," the Chief warned me. "It would ruin the whole future of space travel, as people are just learning to accept it as a matter of course. You will swear your men to utter se-

crecy, and pass me your word, in behalf of your officers and yourself, that you will not divulge any details of this trip."

The scientists, of course, questioned me for days; they turned up their noses at the crude apparatus Hendricks had made, and which had saved the *Ertak* and all her crew—but they kept it, I noticed, for future reference.

All ships were immediately supplied with devices very similar, but more compact, the use of which only chief officers knew. And the scientists, to my knowledge, never did improve greatly on the model made for them by my third officer.

Whether or not these devices were ever used, I do not know. The silver-sleeves at Base are a close-mouthed crew. Hendricks always held that the group of things which so nearly caused the deaths of all of us had wandered into our portion of Universe from some part of space beyond the fringe of our knowledge.

BUT the same source which supplied one brood may supply another. Evidently, from young Clippen's report, this thing has happened. And since starting this account, I have determined why the powers that be are willing now to have the knowledge made public.

The new silicide coating with which all space ships have been covered, is proof against all electrical action. That it is smoother and reduces friction, is, in my opinion, no more than a rather halty explanation. It is, in reality, the decidedly belated scientific answer to a question raised back in the hey-day of the *Ertak*, and my own youth.

That was many, many years ago, as the crabbed, uncertain writing on these pages proves.

And now, rather thankfully, I am about to place the last of these pages under the curious weight which has held the others in place as I have written. That irregular bit of metal from the hull of the *Ertak*, so deeply pitted on the one side, where the hungry things had sapped our precious strength.

"Electites," the scientists have dubbed these strange crescent-shaped things, young Clippen said. "Electites!" Something new under the sun!

New to this generation, perhaps, but not to old John Hanson.

New Plan for Signaling Mars

DURING the past century many ambitious scientists have devised interesting schemes to signal the planet Mars in the hope that, if this neighbor of the earth is inhabited, its people would acknowledge the greeting. Most of these schemes were never tried because they seemed too fantastic, or because of lack of funds necessary to finance them. And those few that have been actually carried out apparently got not the slightest flicker of acknowledgment from the Martians, if any such creatures exist.

Among the scientists who cling to the belief that there is life on Mars and that it may be possible to send a message to that planet, which is about 35,000,000 miles distant from the earth, is Dr. Harry Price, Director of the British National Laboratory of Physical Research. He has a new plan for signaling Mars which may be attempted in the very near future, for several of his fellow scientists and certain men of means look upon the venture as well worth trying.

Dr. Price's idea is to set off the brightest bonfire in the history of the world on the towering summit of the Jungfau, one of the highest peaks in the Swiss Alps. This bonfire, composed of ten tons of metallic magnesium, would be supplemented by a battery of gigantic reflectors to intensify the blinding light of the huge torch and direct its light to a particular area on the Martian snowfields, which would, in turn, reflect the light, and thus attract the attention of the Martians, if such creatures really exist.

The Readers' Corner

A Meeting Place for Readers of Astounding Stories

Get Out Your Pencils!

Dear Editor:

To begin with, we have been looking over our files of Astounding Stories, which are complete except for the first two copies of "our" mag, and have found, to our utter disillusionment, that some of the stories, after we have increased our knowledge of Science Fiction, are not what they appeared to be when first read. To prove our contention we have made an almost complete list of the stories which have appeared, and have graded them (not in order of excellence) according to our scale, which is as follows: 1—excellent; 2—good; 3—fair; 4—poor; and 5—a complete flop.

[A splendid idea, this list of story revaluations from two of our hard-working "Associate Editors"—and my thanks. It so challenged my interest that I made gradings of my own. Mine will be found in the left-hand column; Messrs. Skora's and Benefiel's in the middle; and, because it should be interesting to most Readers to see how your story revaluations match up with your Editor's, I have left a place for them on the right.

It is perhaps a reckless thing for an Editor to commit himself this way, with so many lynx-eyed Science Fiction word-pugilists lurking in the bushes, but I'll take all risks *pour le sport*. Of course, I've not graded any story as a "four" except by comparison with the "ones."

There's plenty of "dope" for fancy deductions. Who shall cast the first stone?—Ed.]

Ready? Here goes:

(1)(1)( ) "The Readers' Corner"—Without a doubt the best feature of the magazine.
(1)(1)( ) "Brigands of the Moon"—Unusual in plot and narration.
(1)(1)( ) "Murder Madness"—Nice work.
(1)(1)( ) "The Forgotten Planet"—No wonder it is a good story: it's a Commander Hanson tale.
(2)(1)( ) "The Terrible Tenacles of L-472"—Same goes for it.
(2)(1)( ) "The Dark Side of Antri"—Ditto for this one.
(1)(1)( ) "Tanks"—You're welcome. Human element is strong and inspiring.
(1)(1)( ) "When the Mountain came to Miramar"—Good handling.
(1)(1)( ) "Dark Moon"—Nice work, Mr. Diffin.
(2)(1)( ) "The Death Cloud"—Sweet stuff from an unbeatable team. Long may they wave.
(2)(1)( ) "In the Orbit of Saturn"—Starzl's a wow!

(1)(1)( ) "The Beetle Horde"—The best story in the first issue outside of "Tanks" (you're welcome).
(2)(1)( ) "The Ghost World"—Commander Hanson stories never grow tiresome.
(2)(1)( ) "The Man from 2071"—Good stuff.
(2)(1)( ) "Holocaust"—Excellent story with human element.
(3)(1)( ) "The Earthman's Burden"—Unusual tale.
(1)(1)( ) "The God in the Box"—Great! like all Commander Hanson stories.
(2)(1)( ) "Werewolves of War"—Truly one of the best stories we have ever read.
(3)(1)( ) "Jetta of the Lowlands"—An excellent story by a fine Author. More power to him.
(2)(1)( ) "The Apemen of Xlotli"—A great story based on Inca mythology and their god, Quetzalcoatl.
(1)(1)( ) "The Midget from the Island"—A poignantly human story in spite of its bizarreness.
(2)(1)( ) "If the Sun Died"—Dandy tale of an entirely plausible happening.
(1)(1)( ) "Brood of the Dark Moon"—Nice finish to a great serial.
(2)(1)( ) "The Planetoid of Peril"—Good.
(1)(1)( ) "Hawk Carse"—A good story, and plenty of room for a sequel.
(3)(1)( ) "Raiders Invisible"—Can't some other country besides Russia jump us?
(2)(1)( ) "The Terror from the Depths"—Commander Hanson scores again.
(3)(2)( ) "The Flying City"—Fair stuff by an up-and-coming Author.
(2)(2)( ) "The Invisible Death"—Worthy of Rousseau.
(3)(2)( ) "Prisoners on the Electron"—Highly improbable, but nicely handled.
(3)(2)( ) "Soul Snatcher"—No comment.
(2)(2)( ) "The Ray of Madness"—Ditto.
(2)(2)( ) "The Moon Master"—Also ditto.
(1)(2)( ) "The Planet of Dread"—Plot a little rehashed but a good story.
(3)(2)( ) "The Second Satellite"—Darn good (for Hamilton).
(2)(2)( ) "Slaves of the Dust"—Shows that women also can write Science Fiction.
(3)(2)( ) "Gray Denim"—Unusual, but well handled.
(2)(2)( ) "The Black Lamp"—The only reason this didn't get a three is because it is a Dr. Bird story.
(1)(2)( ) "The Exile of Time"—How is it that these guys get away with this traveling-into-the-past stuff?
(2)(2)( ) "The World Behind the Moon"—Who knows what may exist there?
(1)(2)( ) "Manape the Mighty"—Too much copying of Burrough's Tarzan stories.
(1)(2)( ) "Sargasso of Space"—Give us more of same and we may reverse our opinion of Hamilton.
(2)(2)( ) "The Port of Missing Planes"—Good, for a Dr. Bird story.
(2)(2)( ) "The Doom from Planet Four"—Worthy of Williamson.
(3)(2)( ) "Cold Light"—No comment.
(2)(2)( ) "From the Ocean's Depths"—Ditto.
(2)(2)( ) "Into the Ocean's Depths"—Ditto.
(2)(2)( ) "Earth, the Marauder"—Science faulty.
(2)(2)( ) "Beyond the Heaviside Layer"—No comment.
(1)(2)( ) "The Power and the Glory"—Dry in sections, but good.
(3)(2)( ) "The Attack from Space"—No dope on this one.
(2)(2)( ) "The Gray Plague"—A little rehashed, but fair stuff.
(1)(2)( ) "The Fifth Dimension Catapult"—Good (and technical).
(1)(2)( ) "Phalanxes of Atlans"—Plot run down and blown away.
(3)(2)( ) "When Caverns Yawned"—No dope.
(2)(2)( ) "When the Moon Turned Green"—With envy?
(2)(2)( ) "The Heads of Apex"—My partner didn't like this one, but I won the fight.
(1)(2)( ) "The Red Hell of Jupiter"—Good story about an enigma.
(3)(2)( ) "The Solar Magnet"—Nothing doing.
(1)(2)( ) "The Hands of Aten"—Highly improbable, but nicely handled. Sounds like Burroughs' "Master Mind of Mars."
(3)(2)( ) "Phantoms of Reality"—It would have been original and new ten years ago.
(2)(2)( ) "Creatures of the Light"—No score.
(4)(3)( ) "The Diamond Thunderbolt"—Suggestive title, disappointing story.
(2)(3)( ) "The Revolt of the Machines"—Plausible, but rather staggering plot.
(1)(3)( ) "The Copper-Clad World"—The Author contradicts his own science.
(1)(3)( ) "The Tentacles from Below"—Good, but why the oversized octopi again?
(3)(3)( ) "Four Miles Within"—Good story, but not up to standard.
(3)(3)( ) "The Lake of Light"—Ditto.
(3)(3)( ) "Monsters of Moyen"—No comment.
(4)(3)( ) "Vampires of Venus"—Too much like Kline's "Planet of Peril."
(3)(3)( ) "The Cavern World"—No go.
(3)(3)( ) "The Lord of Space"—Ditto; not so credible to an Author of this caliber.
(4)(3)( ) "The Silver Dome"—Fair stuff by a good Author.
(3)(3)( ) "Vandals of the Stars"—No comment; not worth it.
(2)(3)( ) "The Jovian Jest"—Also no comment.
(4)(3)( ) "From an Amber Block"—No dope.

(3)(3)( ) "Terror of Air-Level Six"—Plot old.
(2)(3)( ) "Marooned under the Sea"—Kinda deep.
(2)(3)( ) "The Wall of Death"—Not up to Rousseau's standard.
(1)(3)( ) "The Pirate Planet"—Not so hot.
(1)(3)( ) "Vagabonds of Space"—Not worth a comment.
(4)(3)( ) "The Sunken Empire"—Too low for a 2, too high for a 4, so we compromised.
(3)(3)( ) "The Eye of Allah"—A detective (or defective?) classic.
(3)(3)( ) "Terrors Unseen"—Ditto.
(4)(3)( ) "Spawn of the Comet"—Too bad, but I lost again. E. B.
(2)(3)( ) "The Cave of Horror"—Not so hot.
(4)(3)( ) "Invisible Death"—No score for Pelcher.
(4)(3)( ) "Compensation"—No go.
(4)(3)( ) "Stolen Mind"—Also no go.
(2)(4)( ) "Spawn of the Stars"—Just not even worth the effort of a comment.
(4)(4)( ) "The Soul Master"—Ditto.
(2)(4)( ) "The Atom Smasher"—Time-traveling bunk.
(4)(4)( ) "The Murder Machine"—Not worth a comment.
(3)(4)( ) "The Destroyer"—Also not worthy of a comment.
(2)(4)( ) "The Gate to Xoran"—Machine monsters again?
(1)(4)( ) "Beyond the Vanishing Point"—Too fantastic to be Science Fiction, and not too worthy of a good Author.
(4)(4)( ) "The Man Who Was Dead"—Bologna.
(4)(4)( ) "The Corpse on the Grating"—Poorly done rehashing of Poe's "Fall of the House of Usher."
(2)(4)( ) "Out of the Dreadful Depths"—Not worthy of expressing our opinions on.
(3)(4)( ) "The Sea Terror"—Saranoff should shoot Dr. Bird, or vice versa.
(3)(4)( ) "Monsters of Mars"—Get a new plot, Mr. Hamilton, get a new plot!
(3)(4)( ) "Devil Crystals of Arret"—Was Wells stewed when he wrote this pink elephant tale?
(4)(4)( ) "The Danger from the Deep"—Pure and simply boloney. More monsters. Phooey!
(4)(4)( ) "The Moon Weed"—Drag him out!
(3)(5)( ) "A Problem of Communication"—Very dry. We only read it because it was in A. S.
(1)(5)( ) "An Extra Man"—Shows lack of knowledge of elementary physics—law of the conservation of mass.—George Skora and Eugene Benefiel, Box 6, Tucson, Arizona.

"Actually Griped"

Dear Editor:

What I want to do in this letter is to confer a high compliment, to praise a single Author who stands out among many very excellent ones.—Paul Ernst.

Paul Ernst is, to my mind, the most interesting writer in Science Fictiondom. His stories are all consistently excellent. He blends all of the elements of a fine story more skilfully, more artistically, than any other writer whose work I have ever read.

Let's have more by Paul Ernst, and give him an opportunity at a serial. I feel that many Readers are griped (the vernacular slang is excusable in consideration of the proper amplification of my meaning, otherwise the words I would have used might have been censored), actually griped (if I may linger over the emphatic expressive word), at the eternal unchangeable style of your few serial writers. I'll not mention any names, for it is unnecessary. You will have to admit that your serial writers are extremely individual and characteristic of themselves; well and good, there is a demand for these writers; but also let me voice a demand for variety, for someone new.—Tom Olog, 940 5th Street, San Bernardino, Calif.

A First-Timer

Dear Editor:

I am another "first-timer" to write to your magazine, Astounding Stories. I think your artist, Mr. Wesso, is hard to beat on illustrating the front cover of the magazines. I have been reading your magazine for over a year and haven't found a flaw in it yet.

Interplanetary stories are my favorites, such as "Hawk Carse" in the last issue of the magazine. Some more good stories are: "The Sargasso of Space," "Brood of the Dark Moon," "The Midget from the Island," "The Port of Missing Planes" and "The Danger from the Deep"—Earnest A. Lowe, Box 164, Avant, Okla.

Whatta Man, That Hawk!

Dear Editor:

Maybe I should start off by saying that the November number was a wow, that the stories were all 100%, that critics should be booted, and more assorted soft soap. But that's what they all say. I write in to praise that wonderful story, "Hawk Carse." It was one of those rare, "different" stories, and has it all over those world invasions and mad scientists that stuff your pages. The usual heroes are always so saintly that it's a wonder they weren't grabbed off long before by the angels; the heroines are usually the daughters of aged scientists, though occasionally they are beautiful young savages pursued by gorilla-men. Did you ever hear of a villain that wasn't abnormally cruel and brutal?

Oh, what's to keep a fan from becoming embittered?

Nothing but stories like "Hawk Carse."

Let's hear some more from Hawk Carse

himself. Whatta man!—Robert Dryden, 1602 S. Grand Ave., Evansville, Ind.

Stands Pat

Dear Editor:

If you want your magazine to continue to be popular with the average man, leave out a lot of the dry science that other Science Fiction mags have been using lately. That is one reason why I read A. S. Your mag has some science that I can grasp readily enough and which can be understood without too much brain-racking, but the others devote long uninteresting paragraphs to such things as propulsion through space and gravity stabilizers, so that after you get through reading the story you wonder what it's all about. That's a fact. Pick up any other Science Fiction mag and start reading, and you'll think you're looking at a text book instead of a so-called interesting magazine.

I'll give you a hint right now before I close. Don't try to improve Astounding Stories! Many Readers have told me that A. S. is O. K. as is.—Paul J. Hall, 846 11th St., San Diego, Calif.

Got a Giggle

Dear Editor:

I am a new Reader of A. S. I do not mind the uneven edges, for, as other Readers have said, I generally am too interested in the stories themselves to notice them.

Carlyle Bessette in his recent letter said: "This story's trash, this one's terrible and this is rotten. Paul's poor and Wesso couldn't paint 'em any worse if he tried with both hands. The size is disgraceful, and all in all it's about the best magazine on the market." I just had to giggle up my sleeve.

In answer to Allen Spoolman's letter: I agree that if a time machine went into time even a billionth of a second, it would be invisible; but Mr. Cummings probably meant that *before* going into time it would blur, not that it would blur more and more and vanish as it went farther into time (I see no reason why it should blur, but maybe that is Mr. Cummings' idea of time travel). You will note when Mr. Cummings told of a time-cage coming out of time, in other words stopping, he said it appeared suddenly, though in a ghost-like blur.—Kenneth Sterling, 240 W. 73rd St., New York, N. Y.

Premature Terminals

Dear Editor:

In reading certain letters in "The Readers' Corner" one might finally realize that they make cute little Science Fiction stories in themselves. Perhaps this one is also, and perhaps not. We live in a free country, you know!

Criticism of your printing and makeup—none. The type used is excellent, and the makeup pleasing.

Criticism of your cover and rough edges—none. You don't judge a book by its cover or edges, you know.

Criticism of your stories—some. Altogether too many stories end too suddenly. Why? Have you noticed that the Author picks up the thread of your attention, spins it into a series of events, and finally slaps a climax upon it, with a period as big as the moon's disk? That period ought to tell you a lot. The Author carries the thread of your attention so far, and then lets go so abruptly that you resent the treatment. Psychology, you say. You say that the Reader is pleased with the terminus. I say it is not the logical terminus. Imagine a train pulling a string of Pullmans to the summit of the Cascades, where the scene is marvelous. Suppose the crew deserted there. A nice, fine fix, with the terminus just at the foot of the grade. For instance, "The Red Hell of Jupiter." What a lot of Readers would delight in could be easily effected: a few more paragraphs in which the space flier returns to Earth and the occupants make their report—the chief falling all over himself in amazement.—Joseph C. Collins, 1805 Breckenridge Ave., Austin, Tex.

Yessir

Dear Editor:

I have been reading Astounding Stories for quite some time, but I didn't get any of the first dozen issues and felt like kicking myself for being asleep when it first came out.

I noticed Mr. Bessette's letter in the "Corner" in which he said the drawings wouldn't attract a real fan. I'd say a real fan wouldn't pay the least attention to the drawings but would grab an issue and make for home and read it. A fellow that really likes A. S. never sees anything but the stories. As for the fellow who kicks about the uneven pages—I don't suppose he has noticed how handy they are to get hold of in a hurry when you are really interested in a story. I hadn't noticed them until he mentioned it.

Astounding Stories is great! Keep the good work up.—H. R. Taylor, Oak Hill, W. Va.

Hot and Cold

Dear Editor:

Congratulations! "Hawk Carse" is absolutely the most remarkable tale I ever read in A. S. It ended in exactly the right manner for a sequel—so don't deny us, Mr. Bates!

"Raiders Invisible" was just another hero saves-his-country story, but done quite better than usual. "Brood of the Dark Moon" ended splendidly. The rest

weren't worth mentioning. However, I actually enjoyed "Spawn of the Comet" because it was illustrated by Paul. Give us more Paul!—Linus Hogenmiller, 502 N. Washington St., Farmington, Mo.

Sequel Requested

Dear Editor:

I have just finished reading the November issue of Astounding Stories, and I think it is the best yet. All of the stories were excellent.

Why don't you try and get a sequel to the story "Hawk Carse," by Anthony Gilmore?

Now that you have made a wonderful improvement in making the edges of the paper straight, why don't you improve it still more by making the edges even?

I think Wesso is your best artist. Hang on to him. The cover illustration for November sure was good.—Wm. McCalvy, 1244 Beech St., St. Paul, Minn.

As Bad as That?

Dear Editor:

After more than a year of showing them all what a real Science-Fiction magazine is like, has Astounding Stories finally succumbed to the well-known depression? Please, Mr. Editor, "say it ain't so."

A succession of monotonous Dr. Bird stories has probably been a necessary evil, but why the pointless puerility of Paul Ernst? These I have put up with uncomplainingly until the last issue. Two bad ones in one month is too much. This stone monster thing of Ernst's followed by the two-gun Carse horror is too much even for me.

Shades of Jules Verne and H. G. Wells! Is this Science Fiction? Gilmore brings to us an ordinary bad man of the Wild and Woolly West disguised as a space adventurer. His green gimlet eyes and greased lightning draw are so familiar in the newsstand trash with Western labels that it is sickening to see it in "our" magazine. Some fine day Three-Fingered Pete, the bartender, will get this Hawk Carse with his sawed-off double-barreled ray-gun, I know. And that will be a relief to us all.

Seeing new stories announced by Murray Leinster and Ray Cummings keeps me in hope. That is what I like to see coming, but there should be more from these experienced writers. Harl Vincent's stories, "Vagabonds of Space" and "The Copper-Clad World" were thrilling and honest Science Fiction. Can't you give us more like them? Diffin is fairly good, too, as is Arthur J. Burks.

Raise the price up to a quarter if necessary, but keep the quality of stories as it was when the broom was new.—Chas. C. Shirer, 144-44 Sanford Ave., Flushing, L. I., N. Y.

Them's My Sentiments, Too

Dear Editor:

I have been reading Astounding Stories for the past two years, but never did I realize what I was missing until I read the November issue of A. S. "Hawk Carse" was indeed wonderful. Three cheers for Anthony Gilmore!

"The Terror from the Depths" also was a good story. "Raiders Invisible," by D. W. Hall was full of excitement.

What I'm interested in is astronomy. I wish your Authors would write more stories about the planets.

People who don't read Astounding Stories do not know what they are missing!—Joe Perez, Jr., Ft. Worth, Tex.

Salt and Sugar

Dear Editor:

Alas! Again must I begin my letter with a brickbat. Oh, I hoped and prayed that Wesso would keep up his good work, which he began with the September and October covers—but again he drops to his old level with the November cover. The skeleton didn't impress me very favorably, and neither did the surrounding aura; also, the man's face bore the same expression that Wesso's characters always do—amazement, incredibility and fear. Now if the scene had been taken from "Hawk Carse," such as the Hawk's ship swooping on the pirate with rays stabbing towards it, it would have been much more effective.

The stories, however, made up for my lack of enthusiasm over the cover. "The Planetoid of Peril," though rather far fetched, was very interesting reading and was very well written. A silicate form of life, such as the monster described by Mr. Ernst, is admittedly very possible.

"Hawk Carse" was, of course, the best in the issue. It was a very excellent story; I might even go so far as to state that it is the best novelette I have read in your magazine. Mr. Anthony Gilmore, please bow. Thank you. But now I must take you to task. Was it nice to keep us readers in suspense so long? I ask you, was it? Why haven't you made your appearance until now? Why no Hawk Carse stories until now? No answer. I'll forgive you if you promise to give us a novelette in every issue in the near future. Mr. Bates, please, oh please, hustle out the first sequel!

"Raiders Invisible" was very interesting, though it wasn't really good enough to take up as much space as it did.

"The Terror from the Depths": As usual, Mr. Wright uses three-fourths of his story to lead up to the climax, then gives us only about two thousand words of a good story. I'll suggest that Mr. Wright follow one rule which is all important in writing: "Begin as near the climax as possible."

"Brood of the Dark Moon": Excellent, thrilling, engrossing, wonderful—right up

to the smashing conclusion. Mr. Diffin thrills you with his powerful, smashing, thrilling style. His plots grip you, his incidents stamp themselves into your mind by sheer power in phrasing. His descriptions are marvelous.—Carlyle J. Bessette, Charlotte, Vt.

Flagg Waving

Dear Editor:

I'm writing just a few lines to welcome Francis Flagg among the contributors of your magazine. I have been a steady Reader of Astounding Stories since its first number. One swell magazine, I call it, but nevertheless, there seemed to be something lacking to make the magazine complete, although you have had amongst your contributors most of the top-notch writers of Science Fiction and weird stories. However, when I had finished reading the October issue, I knew right away just what had been lacking. Until this issue you never had any stories by Francis Flagg. Now, with the inclusion of Flagg amongst your contributors, Astounding Stories is complete.

I will say, though, that in "The Heads of Apex" he seems to have gone out of his way to cater to the popular demand for the action and sensational type of Science Fiction. That sensational stuff does not rest well on my stomach—not when it comes from his pen. Other writers may indulge in it, because that is all what they can write, but Flagg has abilities above that sort of stuff.

And I'll say in conclusion, that it's *good* news to hear that Francis Flagg is to be among the contributors to your new magazine, Strange Tales.—Paul Thibault, 401 So. 33rd St., San Diego, Cal.

Assorted Comments

Dear Editor:

After reading the assorted comments in the "Corner," I am moved to add a few remarks of my own. I think "The Pirate Planet" is the best thing you have published since I discovered you, and I mention it chiefly because your correspondents don't often refer to it. I found it so desperately interesting I couldn't even wait to get home, but plunged joyously into it on the street car (I have a long ride) and violently resented being bothered with having to watch for my stop. The hero stood out as a vivid, possible, real person, both lovable and heroic; the astronomer was an individual. The Venus atmosphere was so vivid I felt I was actually there.

Mr. Diffin gave you delicate leads that made you suspect things in advance and then feel pleased and clever when you discovered you'd guessed right—like the exquisite beauty of the opalescent architecture on Venus and the contradictorily crude paintings in them. I told myself, these Torg people didn't put up those buildings. Something happened to the race who did. That weird wailing before the space ship was seen, the suspense as to where they were being taken, the thrill of the Venus markings as they sank through the golden clouds, the vivid creepiness of that escape of theirs and the Venusian feeding the poor animals to those awful carniverous plants—the whole story was good out of all reason!

I also liked specially "Werewolves of War," by D. W. Hall—more good characterization and real heroism—"The Tentacles from Below," by Anthony Gilmore and "Phalanxes of Atlans," by F. V. W. Mason. I enjoyed the comic cook in the first. He was a pleasant touch of humorous variety from so much danger and excitement. "The Fifth Dimension Catapult" was another story I read several times.

And I liked "The Planetoid of Peril." Somebody's going to write you scornfully that "it's impossible." Well, so it is, but who cares? You don't feel it while you're reading it. The story has strong local atmosphere, clever ideas on future customs, amusing phrases here and there and an unexpected ending. I smiled to myself at the casual mention of the sco-drill and the great stress laid on the failure of the ray pistols. I thought I could foresee the modus operandi of the denouement. Then the Author placidly smashed the drill and my deductions—and gave the story an unexpected twist! [Authors, note!—Ed.]—E. G. Brown, Ft. Thomas, Ky.

"The Hardened Reader"

De r Editor:

I got my A. S. a little late this month. Was going to pass it up altogether as it didn't look so hot, but bought it anyway.

I was much amused by the fellow who kicked about advertising. Say, I sold advertising once, and I claim anybody who can sell it deserves three cheers instead of a complaint.

Well, as I said before, the book wasn't so hot. You know the hardened reader gets so after a while that even the most "astounding" story doesn't get a good word from him. But I see you have Leinster in the next issue. He knows how to dress them up with verisimilitude. So does Cummings, who is also down for a yarn, but I hope he has a new plot for a change.—Chas. Preison, Apt. 3-1, 1215 Ocean Ave., Brooklyn, N. Y.

"The Conquest of Space"

Dear Editor:

Your Readers are undoubtedly interested in rockets and what they promise for the future, but many of them may not know that scientists are now working in virtually every country in the world to perfect this new source of power and to harness it to swift transoceanic passenger ships and possibly to huge craft capable

of making the journey to the moon or the planets.

Despite the swift and sensational progress of the new science of rocketry, there has not been, until the present, any book in English dealing in a serious, yet non-technical way with rockets and what they are likely to mean to us. Penguin Press is therefore proud to announce to your Readers the publication of "The Conquest of Space," by David Lasser, president of the American Interplanetary Society, which fills this need and more. Mr. Lasser is a keen student of rockets, and is thoroughly familiar with the new science of rocketry both in America and abroad. His book explains what rockets are, how they work, and shows how they will soon revolutionize transportation and make flights to the moon and planets possible.

The introduction to "The Conquest of Space" is written by Dr. H. H. Sheldon, chairman of the Department of Physics, Washington Square College, New York University.—G. Edward Penguin, Pres., Penguin Press, 113 W. 42nd St., New York City.

Announcement

Dear Editor:

I have started a Science Fiction Club for Readers who live in the Rocky Mountains and on the Pacific Coast. There is no age limit. Anyone from a year old to one hundred years may join the club [And probably will! I know these Science Fiction addicts!—Ed.]. The purpose of it is to provide Science Fiction magazines and books for the members of the club. There are small monthly dues used for the purpose of buying more books. I have over 100 magazines consisting of Astounding Stories and old numbers of others.

Anyone interested in joining may write to me, also send a stamped, addressed envelope when writing.—Norman C. Caldwell, 4008—18th St., San Francisco, Cal.

Flagg and Co.

Dear Editor:

Astounding Stories is one of my favorite magazines. There's such a contrast to the Western and true confessions blah-blah, all written in a set pattern. Though you sometimes publish yarns I little care for, Cummings and Vincent can usually be depended on to give good yarns. Vincent, however, tends to mix Wells up somewhat in his stories; not a steal from Wells or anything of the kind, but a rehash of much that has been said before. In "The Moon Weed" he reduces a good idea to the commonplace by having the old stuff of pursuit of villain, etc. Cummings does repeat himself in the "Golden Atom" stories, but he does it cleverly.

I like substance in my yarns; I like to feel that this thing could really happen. So many stories fail to impress me as being more than blood and thunder in a different vein. Why not give us more "different" stories? I suppose they're hard to get [Indeed they are!—Ed.]? That's the reason I like Flagg's yarns. Flagg is not only original but has an artistic style worthy of the big goshamighty monthlies.—William Addis, Rte. 4, Moberly, Mo.

Legions of the Re-integrated

Dear Editor:

There's many an Atlantic roller rolling between us and your great land, but the spanning of that distance with the pen is almost a vivid example of time traveling.

I take off my hat to your magazine. There is nothing to equal your A. S. over here, and when I secured the first issue, I knew I had found the thing I had been waiting for all my life. Imagination controlled by science can never give us stories that are ridiculous, and I laugh at the cynics who laugh at me for reading your magazine. How little must be their imagination! How serious their lives, when they downcry the dreams of to-day that will become the realities of to-morrow!

I have a brick to hurl at one individual who dared to let loose a wild statement under "How Simple!" in a recent "Readers' Corner." Dear Mr. Joseph N. Mosleh, I beg you, sir, not to presume I want to start a controversy, and that personally I have any ill feeling, but I can't sit down here and let what you said pass without objecting.

Sir, I do not dispute your theory of the possibility of the disintegrating and re-integrating, but the last paragraph which you brought in, in a matter-of-fact way, takes some digesting. I do not wish to take the religous standpoint, but I challenge your statement: "that when the said chemical combinations are duplicated the 'soul' simply follows suit."

We'll assume the said duplicate or triplicate "personalities" have been achieved; and for argument's sake, we will take two of the re-integrated men. If the soul is the mere manifestation of the chemical combinations in the man's body, then both being the result of a similar chemical construction have a similar "soul." Thus if one man slept, the other must; if one man talked, the other must; in short, a twin soul is achieved, and must logically—acting in accordance with a precise chemical action—commit actions appropriate.

A thousand and one absurdities would occur if a legion of the re-integrated men got to work. They would all have to walk in the same direction if scattered on the face of the earth. Physical conditions being different, while one was walking down a road, another, somewhere to one side, might find a precipice in his way; but he could not stop; he has to act according to the psychological make-up of the call of the multiple "soul," and down

goes one, or several, of the poor re-integrated men.

I know what your argument will be. You will say that the various men will adapt themselves to their various environments. Ah—but remember, Mr. Mosleh, the chemical combination is the same, and therefore the "soul" the same. A single deviation, a single action contrary, and the whole fabric of a massed "soul" is ripped asunder. Tied to chemical foundations, the souls must act en bloc. If not, then duplication has not been achieved.

How useless then would be this multiple man! Science is the leverage of knowledge, but as yet the pressure brought to bear by man is infinitely small. To presume that the relation of the material with the spiritual has been discovered, is letting imagination loose, and any future scientific story making life the salve of "atoms,"—for that is what it means if the combination of chemical elements and their subsequent reaction constitute the "soul,"—will be treading dangerously near the font of the incredible.—Gerald Evans, 1 Prospect Pl., Fforestfach, Swansea, South Wales, Great Britain.

Salt in Troubled Waters

Dear Editor:

While convalescing at a sanitorium in Morris Plains, I came across the December issue of Astounding Stories. I thoroughly enjoyed the story by Robert H. Wilson, "Out Around Rigel," recommended to me by a fellow patient. Wilson is to be congratulated on his unusual method in ending the narrative. Most stories have the hero and heroine in the final chapter live happily ever after. But, is that astounding? "Out Around Rigel" ends with not only the three principal characters, including the one who tells the story, but the whole world dead. Surely this thoroughness cannot but be admired.

Mr. John Delaney in the "Corner" discusses scientific methods on doing away with grandfathers, using the time travel stories as an example. Tsk, tsk! For shame, John D.!

Although I am a new Reader of your magazine, I hope in the future to follow the characters of the stories through all of their exciting adventures, even to the end of the earth (and very often it is. Ed.) Huh? [Uh-huh.—Ed.] We, in this vicinity, are starting the Peduckas Scientific Fiction Club (no dues) and would be glad to hear from any of the Readers. We would also be pleased to settle any disputes of a scientific nature [*Any?* Which came first, the chicken or the egg?—Ed.]. —X. Peduckas, Pres., Peduckas Scientific Fiction Club, 75 Aycrigg Ave., Passaic, N. J.

What Says Mr. X. Peduckas?

Dear Editor:

Thus far the chief objection to time traveling has been this: if a person was sent back into the past or projected into the future, it would be possible for said person to interfere most disastrously with his own birth or else just as capably dispatch himself by his own hand in the future.

And then from our Readers arises a storm of dissension. No! Such insane paradoxical absurdities shall never come to pass. And in answer I say, "Why not?" I contend it is perfectly plausible. In fact, I await the day when these stupendous events do occur. I know it sounds foolish and absurd, but I see no reason, absolutely none, why in the near future havoc shall not be wrought with time and space. Something should be done about it.

I like the friendly and cooperative "Readers' Corner" where Editor and Reader open up wide and frankly [Thanks, Mr. B. I think we all do.—Ed.]. —Arthur Berkowitz, 768 Beck Street, Bronx, N. Y.

Space Suits Technically Flawed

Dear Editor:

Where is my sequel to "Hawk Carse"? I am getting mad waiting for it. . . .

I think the best cover you ever published was the September issue, "The Sargasso of Space." It was very interesting, only I object to that kind of a space suit because the helmet could break too easily. And there are other space suit descriptions that I'm against—such as the ones described in "The Copper-Clad World." They were made out of cloth. Well, that's good! Why, the air would leak out so quick that a man wouldn't last three seconds.—Rush Harp, 536 W. 111th St., New York City.

Poor Suppressed Authors!

Dear Editor:

I think you should change that goofy policy you have. Have editorials and contests and all that sort of thing. And give away the drawings to the Readers who want them. You're friendly enough—but the magazine isn't.

The thing I dislike utterly about your mag is the sappy policy that all stories must conform to a certain set style. That's abominable. Too cold; scientific. All your stories'll get to be just like tramp, tramp, tramp. They're all the same—90% action and adventure, 10% science. I don't like it—and I know lots of Authors who don't, too. They all agree that they can't turn out such good work under such a system. You shouldn't suppress them. Give them a free rein to write as they darn please. Then you'll get better stories.

Wesso's latest cover is all X; one of the most interesting ones "we" have yet had.

The only unknown Author in the December issue strangely enough wrote one of the most amazing stories, "Out Around Rigel." And Ray Cummings' "White In-

vaders": whoops! what a tale! And "Morale," by Murray Leinster, who is a remarkable Author.

Saluton! mia kara amiko Mr. Editor—as we say in Esperanto, the Universal Language!—Forrest Ackerman, 530 Staples Ave., San Francisco, Cal.

Expert Opinion

Dear Editor:

. . . I will say that Joe Kucera has good taste when he picks Paul for an artist, because Paul is an artist, and Wesso an imitation. I say Wesso is an imitation because I'm an art student at Albright School of Fine Arts, and think I know something about art.

Why do some Readers knock your size and edges? . . . And women, phooey? Since when have they had brains enough to criticize an intelligent magazine, and especially at the age of 15. I won't mention names, Miss [For shame—hitting a woman!—Ed.]. And if anybody wants to argue with me about the magazine, here is my address.—Frank Schostick, 350 Jefferson St., Buffalo, N. Y.

When Scot Meets Scot

Dear Editor:

Well, here's a Scotch laddie wanting tae have a bit of talk wi ye. I read your stories every time I gang tae Glesga and can get one. Yer mag is a great book, and I hope it will always be like that.

Say, if any o' ye lads and lassies wid like tae write tae me, I'll swear I wull answer every letter I get. I have piles o' yer magazines and I tried tae sell them back tae the man I bought them frae, but there was nothing doing. [I dinna doot. Ah weel!—Ed.]

Well, Ed., I doot I canna write a letter like some of your crowd; I canna understand aw your funny wisecracks. I am 18 years auld and a ferry man frae the Clock tae Dunoon. Look this up on yer Atlas big boys and lassies, and I'll be seeing ye.—Harry Laidlaw, Flemingford, Victoria Rd., Dunoon, Argyll, Scotland.

Free-for-All

Not much room in the "Corner" this month after our long "Get Out Your Pencils!" item, so I've cut the following excerpts from other interesting letters:

"A Mr. John Gervais tried to explain to a Mr. Crowson the principle of rocket propulsion for space flying. Please know that for every thrust there must be a counter-thrust, and that if he will build a barrel shaped like an ice-cream cone he will get double the kick, and also if he will drill the outer half of a shotgun barrel full of three-eighth holes he will find that the gun does not kick nearly as hard. . . . The only way space flying will be accomplished will be by deflecting centrifugal force. Space flying would be accomplished if someone would put a large enough prize and guarantee the inventor protection. I would take a shot at it myself. . . . Why not print all the addresses you have once every six months? We could get acquainted.—George H. Armstrong, McKinley Ave., Rte. 4, W. Hempstead, N. Y." Thanks so much for your suggestion. I'm going to do it every month—and, as you see, I'm starting right now!

An objection appears to "Out Around Rigel," by Robert H. Wilson. "I don't understand how 1000 years have passed without the hero getting old or showing even a slight change in his physical features. I will appreciate someone's writing to me and explaining it. . . . I would like some correspondents about 15 years of age, both male and female. I will willingly answer each and every letter that is received from other Readers.—Theodore Lutwiniak, 199 Warren St., Jersey City, N. J."

"I'm mad! Why was the September issue of A. S. ruined by having that awful 'Devil Crystals of Arret' in it? Boy, that spoiled the whole issue for me—and then someone writes, in the December issue, that 'Devil Crystals of Arret' and 'The Sargasso of Space' were excellent! Gr-r!—Kenneth Hawkins, 64½ Mt. Herman Way, Ocean Grove, N. J."

"Really, if W. R. Baker thinks two other magazines eclipse A. S., why does he buy it? And, as for improving A. S.—that's a laugh! . . . I have read both issues of Strange Tales and enjoyed them thoroughly. I think it is a very good idea to have a magazine for Weird Fiction.—(Miss) Betty Larimer, 109 Woodlawn Ave., Topeka, Kans."

Fault is found with Wesso for several "inaccuracies" in his illustrations. In commenting on the cover for "Manape the Mighty," we hear: "There never were such apes as those, and where is 'Manape's' mighty chest? I only see a mighty stomach!—Violet P. Ede, Flat 16, 99 Cadogan Gardens, Chelsea, London S. W. 3, England."

"Next month Astounding Stories will be two years old. I have all 24 issues, and I refuse to part with them. Every so often I take them down off their shelf and look through them, noticing all the improvements that have been made. . . . A. S. started improving from the start. You gave the Readers almost everything they asked for—better stories, better illustrations and a Readers' department. You discovered new Authors and published new stories by established ones. No wonder the magazine is such a success.—Jack Darrow, 4225 N. Spaulding Ave., Chicago, Ill."

H. Thompson Rich's "Spawn of the Comet" contained, for another Reader, errors in the means by which the negatives of the fiery termites were developed. Sorry, but no room for the highly technical process described, which ends: "By the time Professor Wentworth has

finished he should have a complete set of absolutely opaque plates. . . . All Science Fiction is on the decline. Authors of it to-day are making a great mistake by attempting to imitate. When a story is very good no other Author has yet successfully written a like story. Even the same Author in a sequel never equals the original. . . . I might state that no successful work of any art has ever been repeated.—E. L. Long, 2170 Washington Ave., New York, N. Y."

"It is seldom that one story alone elicits much praise from yours truly, but after perusing the November issue of good old Astounding Stories I can no longer hold myself in check! 'Hawk Carse'! If I were not by nature sedate and dignified I would burst out in cheers. Someone said that stories should contain enough technical science to render them plausible. If Mr. Anthony Gilmore can keep the high standard of intense interest and fine descriptive quality he has set for himself in this latest, he has a most promising literary career. To say the least—even lacking technical science—the story 'Hawk Carse' was most unusual. Let's get away from Earth with our stories! . . . There is going to be a sequel to 'Hawk Carse.' I'm telling you, not asking; we demand one! . . . 'Spawn of the Comet,' for sheer originality and breath-taking novelty of conception, was unsurpassed. My guess is that Mr. Rich is a newspaperman. Am I right?—Louis C. Smith, 1908 98th Ave., Oakland, Cal." Right you are. He was one for years.

"A year or two ago I read all the Science Fiction books and magazines I could find. They were of particular interest in stimulating imagination and independent thinking. But lately I am getting somewhat tired of them: I buy your magazine maybe once in three months, but the old enthusiasm is gone. Why? For the same reason that I do not care to see a boxing contest or a bull-fight. Instead of using super-science in the service of man's struggle against nature's obstacles, most of your writers seem to think it necessary to use it in the service of brutality and wholesale slaughter. It goes against the grain, and I presume a great number of your Readers feel the same way. It would be a great pity if they were as bloodthirsty as some of your Authors appear to be.—F. A. Netland, 1343 Francisco St., Berkeley, Cal."

Booth Cody, of the Bronx, New York City, having liked Murray Leinster's "Morale," writes in and asks for "more ale." Did I hear someone say, "And better!"?

"Let's don't have any more serials of over two installments in A. S." And, "Yours till the earth grows old, and the sun grows cold, and the last issue of A. S. is sold.—Ray Y. Tilford, Rockport, Ky."

A good letter from England, ending with: "I hope you will publish my letter, so that other boys and girls in your country (or my own) without enough science knowledge to make them highbrows, will write to me and start up what may prove to be a highly interesting correspondence. —E. W. Beaumont, 56 Harvey Rd., Ilford, Essex, Eng."

"Say, why not take those two or three pages in the back that you use for advertising and print some more letters? They surely are interesting. I always read them first. . . . I would like to correspond with boys and girls about 15 years of age. All letters will be answered promptly.—Claude Hoef, Monroe City, Mo."

"I have read the first and second issues of Strange Tales and think it the creepiest, most hair-raising magazine I have ever read, but why not publish it monthly instead of bi-monthly? I recommend Strange Tales to Readers of A. S. as a fitting sister magazine to A. S.—George Patrikaris, 527 State St., Schenectady, N. Y."

"Why not put out A. S. once a week? . . . I would appreciate letters from other readers, and will answer all I can.—Marion Phillips, Grand Rapids, Minn."

Other Good Letters Received from:

Elmer Gustafson, 1605 N. Elgin, Tulsa, Okla.

Paul S. Smith, 56 Berwyn St., Orange, N. J.

J. E. G. Byrne, Abbey View, Coliemore Rd., Dalkey Co., Dublin, Ireland.

Mrs. F. Weber, Martinsburg, Neb.

Dorothy Hall, 119 Chatham St., Williamsport, Pa.

Wallace Grube, Jr., 801 St. Clair St., Latrobe, Pa.

Richard Mullen, 137 Sinclair St., Bellevue, Ohio.

S. H. Weaver, 103 Webb Ave., Ocean Grove, N. J.

Frank Specht, Jr., 345 East St., Buffalo, N. Y.

Richard O. Conrad, Rush City, Minn.

James Mooney, Old Road, Mt. Kisco, N. Y.

Jack Garner, Atwater St., Porivua, Wellington, N. Z.

Robert Baldwin, 359 Hazel Ave., Highland Park, Ill.

"The Readers' Corner"

All readers are extended a sincere and cordial invitation to "Come over in 'The Readers' Corner'" and join in our monthly discussion of stories, authors, scientific principles and possibilities—everything that's of common interest in connection with our Astounding Stories.

Although from time to time I may make a comment or so, this is a department primarily for *Readers,* and I invite you to make full use of it. Likes, dislikes, criticisms, explanations, roses, brickbats, suggestions—everything's welcome here; so "Come over in 'The Readers' Corner'" and discuss it with all of us!

—*The Editor.*

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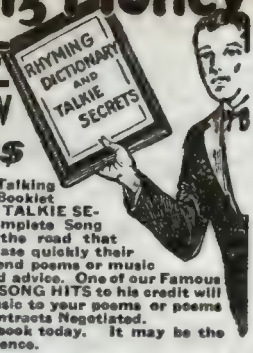

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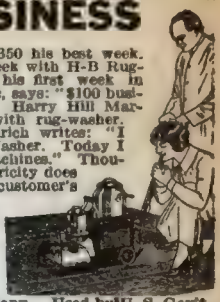

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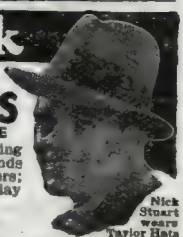

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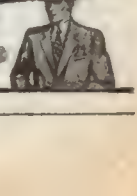

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33x4	2.95	1.15	28x5.25	2.95	1.35
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32x4½	3.20	1.45	31x5.25	3.10	1.35
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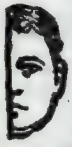

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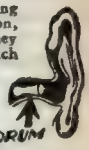

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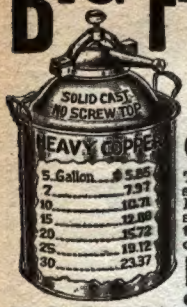

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"I know that's not your fault, any more than it is mine.

"But that doesn't change the fact that some of us right now are in a pretty tough spot—with families to worry about—and a workless winter ahead.

"Understand, we're not begging. We'd rather have a job than anything else you can give us.

"We're not scared, either. If you think the good old U. S. A. is in a bad way more than temporarily, just try to figure out some other place you'd rather be.

"But, until times do loosen up, we've got to have a little help.

"So I'm asking *you* to give us a lift, just as I would give one to you if I stood in your shoes and you in mine.

"Now don't send me any money—that isn't the idea. Don't even send any to the Committee which signs this appeal.

"The best way to help us is to give as generously as you can to your local welfare and charity organizations, your community chest or your emergency relief committee if you have one.

"That's my story, the rest is up to you.
"I'll see it through—if *you* will!"

—Unemployed, 1931

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Walter S. Gifford
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Owen D. Young
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The President's Organization on Unemployment Relief is non-political and non-sectarian. Its purpose is to aid local welfare and relief agencies everywhere to provide for local needs. All facilities for the nation-wide program, including this advertisement, have been furnished to the Committee without cost.

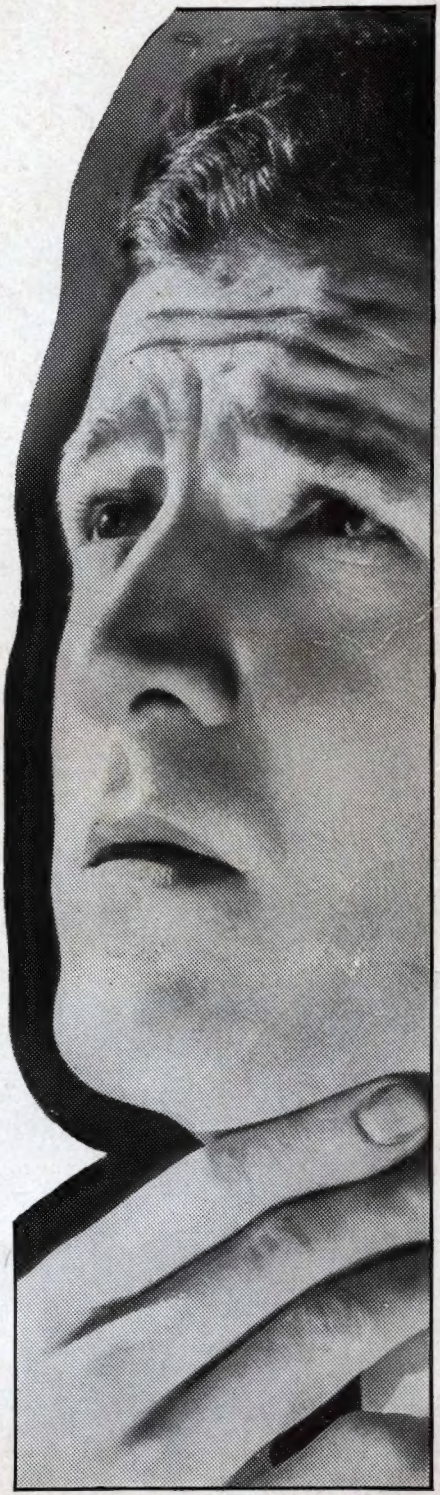
This advertisement is printed without charge by the Clayton Magazines.

USE ONLY LISTERINE TO RELIEVE

SORE THROAT

It is SAFE

Heals tissue while it kills germs.
Reduces mouth bacteria 98%.



When you want relief from sore throat, do not expect it from ordinary mouth washes. Weak ones accomplish nothing. Harsh ones may irritate the very delicate throat tissues, and thus allow germs easier entrance to the body.

Physicians and nurses, and at least 10,000,000 people, have found that full strength Listerine promptly relieves ordinary sore throat. One trial will convince you also. When you use Listerine, you know you are safe—that this great antiseptic actually heals tissue; no irritation whatsoever. You know also that it kills germs in the fastest time. That it reduces bacteria on the surface of the mouth 98%.

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Several hundred people were divided into three groups and kept under medical supervision for periods ranging from 4 weeks to 4½ months, during the winter of 1930-31. One-third of them gargled with full strength Listerine twice a day. One-third gargled with it five times a day. One-third did not gargle with it at all.

Those who gargled with Listerine twice a day contracted only one-half to one-third as many colds as those who did not gargle at all. When Listerine users did develop colds, they were approximately one-fourth as severe and lasted only one-third as long. In a number of tests, even greater resistance was registered.

Those who gargled with Listerine five times a day showed still greater resistance but not in the direct ratio to the number of times used.

These results, amazing as they are, do not mean that Listerine should be used as a substitute for the family physician, who is always your best friend in time of illness. They *do* mean that the average person can reduce the risk of ill-health considerably by the systematic twice-a-day use of full strength Listerine. Begin now. See how your health improves.

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